

July 18, 1980



UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING APPEAL BOARD

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|--------------------------------------|---|--------------------|
| In the Matters of |) | |
| |) | |
| PHILADELPHIA ELECTRIC COMPANY ET AL. |) | Docket Nos. 50-277 |
| (Peach Bottom Atomic Power Station, |) | 50-278 |
| Units 2 and 3) |) | |
| |) | |
| METROPOLITAN EDISON COMPANY ET AL. |) | Docket No. 50-320 |
| (Three Mile Island Nuclear Station, |) | |
| Unit 2) |) | |
| |) | |
| PUBLIC SERVICE ELECTRIC AND GAS CO. |) | Docket Nos. 50-354 |
| (Hope Creek Generating Station, |) | 50-355 |
| Units 1 and 2) |) | |

LICENSEES' RESPONSE TO NRC STAFF MOTION
FOR LEAVE TO INCLUDE HEALTH EFFECTS FINDINGS

On July 3, 1980, the NRC Staff filed a Motion for Leave to Include Health Effects Findings concurrently with its Proposed Findings of Fact and Conclusions of Law in this proceeding. The Staff expressed its belief that if its proposed findings with respect to the magnitude of radon releases were accepted by the Appeal Boards, the issue of health effects would be ready for final disposition. Accordingly, Part V of the Staff's Proposed Findings of Fact and Conclusions of Law discusses the de minimis theory of health effects adopted by the Licensing Board in Duke Power Company (Perkins Nuclear Station, Units 1, 2 and 3), LBP-78-25, 8 NRC 87 (1978).

Licensees respectfully submit that the Appeal Boards are now in a position to reach the health effects issue and therefore finally resolve the entire radon question. In order to

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do this, the Appeal Boards must be able to answer three separate issues:

- (1) the magnitude of the radon emissions;
- (2) the validity of the de minimis theory;
and
- (3) the comparison between the radon emissions as determined in Perkins and in this proceeding (in order to ascertain whether the de minimis conclusion reached by the Perkins Licensing Board with respect to the Perkins-determined emission levels can also be applied to the emission levels determined here).

All of these can be answered on the record as it now exists. The first issue is, of course, the subject of the proposed findings submitted by the parties as well as the prior determinations in ALAB-562, 10 NRC 437 (1979). The second and third issues are dealt with below.

The health effects issue, and in particular the issue of the de minimis approach utilized in Perkins, has already been addressed by the parties in briefs submitted pursuant to the directive of the Appeal Boards in ALAB-509.^{1/} As the Appeal Boards

1/ Philadelphia Electric Company (Peach Bottom Atomic Power Station, Units 2 and 3), ALAB-509, 8 NRC 679, 684-85 (1978). See Licensees' Response to Briefs in Opposition to the Perkins Approach (April 4, 1979) filed on behalf of the Peach Bottom and Hope Creek Footnote continued on next page.

noted there, if they were to "subscribe to [the Perkins de minimis] view, there would appear to be no reason to consider the question of health effects further."^{2/} The Appeal Boards also stated that the parties "may not have another opportunity to file briefs before us on the correctness of the de minimis theory."^{3/} Accordingly, Licensees are of the view that the de minimis issue is ripe for decision.

In asking the parties to address the health effects issue, the Appeal Boards stated that the parties "should accept arguendo the levels of exposure set forth in Perkins."^{4/} The Boards further stated that if at a future time they were "to find the Perkins emission and concentration figures correct (or reasonably close to being so), we would have to come to grips with the [Perkins] de minimis theory."^{5/} As shown in the attached table

(Footnote 1 continued.)

licensees, and see Part IV of Applicants' Memorandum on Radon Emissions and in Support of the De Minimis Approach (April 9, 1979), filed on behalf of the Tyrone licensee and adopted by the Three Mile Island licensee. Intervenors filed: In Response to the De Minimus Theory and ALAB-509 (February 19, 1979) (ECNP); Response of Ecology Action of Oswego and Northern Thunder, Inc. to ALAB-509 (February 19, 1979) (Ecology Action); Response to the Peach Bottom Licensees Response on De Minimuser (April 12, 1979) (ECNP).

2/ ALAB-509, 8 NRC at 684.

3/ ALAB-509, 8 NRC at 684 n. 13.

4/ Id. at 684 n. 11.

5/ Id. at 684.

(Appendix A) which compares the level of emissions for each radon source term as established by the record in Perkins and the instant proceeding, respectively,^{6/} the emission levels found by the Perkins Licensing Board are indeed "reasonably close" to the corresponding magnitudes established in the instant proceeding. It is sufficient to note that the greatest difference for any source term is only a factor of two, and the bounding, long term releases from mining and milling differ from those found in Perkins by only 40% (280 ci/yr-AFR current estimate versus 200 ci/yr-AFR found in Perkins). In this regard, the Licensing Board in Perkins stated that even "[d]ifferences by a factor of five are not important for our purposes of comparing natural background to the amount that might be due to Perkins."^{6/} Thus, the total radon emission attributable to the mining and milling of uranium, even accepting the new figures, would still be an extremely small fraction of one percent of the amount of radiation attributable to the natural emission of radon from the soil of the United States.^{7/} Accordingly, the Appeal Boards may properly find that the Perkins findings on radon emissions were "reasonably close" for the purposes of examining the Perkins de minimis approach.

6/ LBP-78-25, 8 NRC at 96 n. 7.

7/ The Perkins Licensing Board determined that natural background radiation is 10^8 Ci-yr. LBP-78-24, 8 NRC at 94. Of course, additional radon concentrations are found inside homes and buildings. Id. at 96.

Having established that the Perkins factual premise as to radon emission levels was reasonably correct, Licensees submit that the de minimis approach is valid as a matter of law. For the reasons expressed by the Licensees in their memoranda filed in response to ALAB-509, the Commission is not required to take negligible or inconsequential environmental impacts into consideration when making its cost/benefit analysis under NEPA. The Appeal Boards are respectfully referred to those briefs, for a fuller statement of Licensees' position on the de minimis theory.^{8/}

Conclusion

For the reasons discussed above, the Appeal Boards, now in a position to make their findings as to the level of radon emissions based upon testimony in this proceeding, should decide the de minimis issue because Perkins correctly determined the level of radon emissions within a close approximation and the de minimis theory is proper as a matter of law to exclude insignificant environmental impacts in making the cost/benefit analysis required by NEPA.

^{8/} In a case decided after the filing of briefs on the de minimis issue, a district court expressly relied upon the comparison between natural background radiation and radon emissions from uranium mining and milling in determining that a uranium mining project did not require an environmental impact statement. Peshlakai v. Duncan, 476 F.Supp. 1247, 1253 (D.D.C. 1979).

Respectfully submitted,

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Dated: July 18, 1980

MINING SOURCE TERM

| | <u>Perkins</u> | <u>Current</u> |
|--|------------------------------|------------------------------|
| Underground, short term (active period) | 4060 Ci/AFR ^{1/} | 8000 Ci/AFR ^{2/} |
| Underground long term | 0 Ci/yr-AFR ^{3/} | 270 Ci/yr-AFR ^{4/} |
| Open-pit, short term (active period) | 4000 Ci/AFR ^{5/} | 630 Ci/AFR ^{6/} |
| Open-pit, long term | 200 Ci/yr-AFR ^{7/} | 80 Ci/yr-AFR ^{8/} |
| Combined mining, short term | 4000 Ci/AFR ^{9/} | 5200 Ci/AFR ^{10/} |
| Combined mining, long term | 100 Ci/yr-AFR ^{11/} | 200 Ci/yr-AFR ^{12/} |

MILLING SOURCE TERM

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| | <u>Perkins</u> | <u>Current</u> |
|--------------------------|------------------------------|--------------------------------|
| Active Period | 750 Ci/AFR ^{13/} | no change ^{14/} |
| Inactive Period | 350 Ci/AFR ^{15/} | no change ^{16/} |
| Long Term (stabilized) | 1 Ci/yr-AFR ^{17/} | 1-10 Ci/yr-AFR ^{18/} |
| Long Term (unstabilized) | 100 Ci/yr-AFR ^{19/} | 75-80 Ci/yr-AFR ^{20/} |

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- 1/ LBP-78-25, 8 NRC 87, 90, ¶10 (1978).
 - 2/ Tr. 363 (Wilde).
 - 3/ LBP-78-25, 8 NRC at 90, ¶11.
 - 4/ Wilde at 12, 15.
 - 5/ LBP-78-25, 8 NRC at 91, ¶15.
 - 6/ Tr. 384 (Wilde).
 - 7/ LBP-78-25, 8 NRC at 91, ¶13.
 - 8/ Wilde at 11, 15.
 - 9/ LBP-78-25, 8 NRC at 91, ¶15.
 - 10/ Tr. 348, 349 (Wilde).
 - 11/ LBP-78-25, 8 NRC at 91, ¶13.
 - 12/ Wilde at 15, 17.
 - 13/ LBP-78-25, 8 NRC at 92-93, ¶20.
 - 14/ No testimony was offered in the instant proceeding to challenge the Perkins finding.
 - 15/ LBP-78-25, 8 NRC at 92-93, ¶20.
 - 16/ No testimony was offered in the instant proceeding to challenge the Perkins finding.
 - 17/ LBP-78-25, 5 NRC at 94, ¶30.
 - 18/ Id.
 - 19/ LBP-78-25, 8 NRC at 93, ¶23.
 - 20/ Goldman at 12, 23 (conservative estimate: 135-160 Ci/yr-AFR)