

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

U.S. NRC

Before the Atomic Safety and Licensing Board Panel

'81 DEC 22 P3:43

In the Matters of

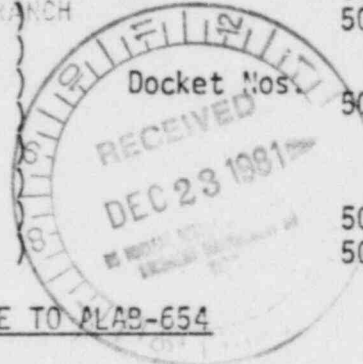
PHILADELPHIA ELECTRIC COMPANY, et al.  
(Peach Bottom Atomic Power Station,  
Units 2 and 3)

METROPOLITAN EDISON COMPANY, et al.  
(Three Mile Island Nuclear Station,  
Unit 2)

PUBLIC SERVICE ELECTRIC AND GAS COMPANY  
(Hope Creek Generating Station,  
Units 1 and 2)

OFFICE OF SECRETARY  
DOCKETING & SERVICE  
BRANCH

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INTERVENORS' RESPONSE TO ALAB-654

The Intervenors hereby submit in response to ALAB-654 a supplemental affidavit of Dr. Chauncey Kepford, setting forth statements of fact on the radon health effects issue as to which there remains an unresolved material dispute. We view this affidavit as supplemental to the earlier June 26, 1979, affidavit of Dr. Kepford which we have previously submitted. Together these affidavits demonstrate the severity of the radon health effects problem, the need to factor consideration of this problem into the licensing process, and the necessity of suspending the affected reactor licenses until this problem has been solved, which has not yet occurred.

ALAB-654 ignores entirely the pivotal role which the TMI-2 operating license proceeding plays in requiring the NRC to reassess the problem of radon emissions attributable to the nuclear fuel cycle. The Commissioners ordered the Appeal Board to examine the problem of fuel cycle radon emissions in 1978 only after the TMI-2 Intervenors conclusively demonstrated that the then existing value for radon-222 in Table S-3 was erroneous. This disclosure occurred in the context of the Hartsville decision (ALAB-367), which directed licensing boards that, when making an assessment of the comparative health effects of alternative means of providing for energy needs, "there must be a common basis for comparison." When comparing nuclear, coal, solar, and other forms of satisfying current and projected energy needs, the background levels of radon in the ambient environment which exist are identical for each of the alternatives. In comparing alternatives,

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background levels of radiation should not be considered at all, because they operate in an identical way on the cost-benefit ledger for each of the alternatives. As was shown in the TMI-2 proceeding and again in Perkins, the adverse health effects of coal -- which is widely recognized as being a harmful means of generating electricity and is second only to nuclear power in the severity of its impacts -- are dwarfed by comparison with the adverse health effects of generating electricity by nuclear power.

We also wish to emphasize that the pertinence or relevance to this proceeding of background radon emissions, whether due to outdoor or indoor sources, has never been demonstrated. Instead, faced with the substantial public health problem which fuel cycle radon emissions represent, the NRC has simply affirmed that background radiation levels are relevant, without ever making an effort to explain what possible relevance background radiation levels could have to this proceeding, and despite considerable evidence that cumulative doses of radiation are additive in causing premature deaths from leukemia, cancer, and other disease produced by ionizing radiation, including genetic defects. We submit that the de minimus theory relies upon mere affirmation, rather than scientific argument, because it cannot be supported on scientific or technical grounds.

We also challenge the relevance of selecting the entirety of the continental United States as the reference background area against which fuel cycle radon emissions should be compared. The electricity generated by a given nuclear plant does not serve the area of the entire continental United States. Should the background area considered, if any, be restricted to a land area far smaller than the entirety of the continental United States? Should the fuel cycle radon emissions being considered reflect the entire projected operating life of a reference reactor, or of seventy-five operating reactors, for that matter?

~~If the~~ land area being considered relevant is the entirety of the continental United States, why not also factor in natural radon flows into the United States from Canada or Mexico? Why not also consider dilutions of background levels due to air movements coming from these countries or from over the oceans surrounding the continental United States?

None of the above questions can be answered by the NRC Staff because the overall concept of comparing fuel cycle releases to background radon levels is absurd, arbitrary, misleading, and wholly irrelevant.

We also urge the Appeal Board to review and consider all material on radon health effects which the Intervenor developed during the course of the TMI-2 and Perkins licensing proceedings, and the many items which we have previously submitted in the consolidated radon proceeding. In light of the Staff's and the Applicants' repeated efforts to dispute the severity of the radon health effects problem and to wish it away by administrative fiat, a further evidentiary hearing is appropriate and necessary to address the points raised in this filing and the Kepford affidavits. The questions raised by the Kepford affidavits must be fully ventilated. Until such a hearing on the health effects of radon is held, the Appeal Board should adopt the uncontraverted calculations which Dr. Kepford summarizes in his affidavits, which indicate that the public health risks posed by fuel cycle radon releases may be as high as 100 million avoidable premature deaths per annual fuel requirement per reactor. In the unlikely event that the Staff actually believes that this staggering number of premature deaths is de minimus, we re-emphasize that the NRC Staff has clearly failed to execute its responsibilities in the manner required by law.

Ecology Action of Oswego joins also in this response.

Respectfully submitted,

*Judith H. Johnsrud*

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and Peach Bottom Intervenor  
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Dated this 18<sup>th</sup> day  
of December, 1981

CERTIFICATE OF SERVICE

I certify that copies of INTERVENORS' RESPONSE TO ALAB-654 and SUPPLEMENTAL AFFIDAVIT OF DR. CHAUNCEY KEPFORD SETTING FORTH THE INTERVENORS' STATEMENT OF THE FACTS AS TO WHICH THERE IS A MATERIAL DISPUTE have been served on the parties in this proceeding by deposit in the US Mail, first class, postage paid, this 18<sup>th</sup> day of December, 1931.

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