9/15/78

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING APPEAL BOARD

In the Matter of	)	
METROPOLITAN EDISON COMPANY (Three Mile Island 2)	))	Docket No. 50-320
PHILADELPHIA ELECTRIC COMPANY (Peach Bottom Atomic Power Station, Units 2 and 3)	)))	Docket No. 50-277 50-278

NRC STAFF'S ANSWER TO INTERVENORS'
JOINT FILING DATED JULY 27, 1978

Pursuant to paragraph 3 of ALAB-480 (Slip. Op. at pp. 18-19), Intervenors in the two captioned proceedings filed a Joint Filing dated July 27, 1978 in which they ask the Appeal Board in each proceeding to receive further evidence on the radon issue. Intervenors allege certain deficiencies in the Perkins record and object to its use without supplementation in the above-captioned proceedings.

For the reasons set forth below in Part I, the Staff believes that Intervenors' procedural objections to the use of the Perkins record in the captioned proceedings are unfounded and that Intervenors give no other justification for amplification of the Perkins record in the captioned proceedings.

In Part II, the Staff indicates its belief that the Perkins evidentiary record supports the generic findings and conclusions of the Licensing

Board with respect to the significance of effects associated with radon release from the uranium fuel cycle attributable to fueling of a light water nuclear power reactor of approximately 1000 MWe, and that such effects do not tip the cost-benefit balance against operation of Peach Bottom 2 and 3 or against operation of Three Mile Island 1 and 2.

PART I

Intervenors show no defect in the Perkins record requiring modification or amplification in connection with the captioned proceedings.

A. Alleged Procedural Defects in Perkins

Intervenors' Joint Filing is, in the main, an extended, repetitive series of accusations of improper conduct on the part of the NRC Staff, the Perkins Applicant, and the Perkins Licensing Board. Fundamentally Intervenors assert a number of allegedly improper procedural rulings and rulings on the evidence proffered. Intervenors assert these allegedly improper rulings are "deficiencies" in the Perkins record and assert that they should (or must) be corrected as Intervenors proposed in the Joint Filing.

Briefly, these alleged procedural "deficiencies" relate to:

(1) Inadequate opportunity for Perkins Intervenors' witness to prepare testimony,

(2) Inadequate opportunity for discovery in Perkins,

(3) Refusal by Perkins Licensing Board to admit certain exhibits proffered by Perkins Intervenors,

(4) Refusal by Perkins Licensing Board to admit, as evidence, certain testimony of witness for Perkins Intervenors offered at deposition of said witness.

Even a very brief review of the background and the record in the Perkins case makes clear that the alleged "deficiencies" are simply non-existent.

1. Background - After a period of some months following Dr. Jordan's memorandum concerning Staff radon release estimates in Table S-3, the Staff, in January 1978, prepared a series of affidavits, filed with the Three Mile Island proceeding.[1/] On January 25, 1978, these affidavits were appended to the Staff Response to Three Mile Island Intervenors' Motion for Stay. A copy of the Staff Response and the attached affidavits was served upon Dr. Kepford. The Staff also brought to the attention of the Commission its belief that the then current value set forth in Table S-3 for radon release from the uranium fuel cycle was in error. (SECY 78-99, exhibit J).

Initially, the Commission, on March 2, 1978 (7 NRC 307) in connection with the Three Mile Island Unit 2 proceeding, waived application of the rule with respect to the specific value for radon-222 set forth in Table S-3 and directed the Appeal Board to review the Three Mile Island

1/ The Appeal Board in ALAB-456 on January 27, 1978 held that challenge to the radon value then contained in Table S-3 was an impermissible attack on the Commission regulations and took no cognizance of the Staff affidavits in ALAB-456.

2 case as though no radon-222 release figure had been determined by regulation in Table S-3. Subsequently, on April 11, 197[illegible], the Commission modified Table S-3 to delete the value for radon release on an interim basis and to permit the value for radon release to be considered in individual proceedings. (43 F.R. 15613, April 14, 1978).

Thereafter, on April 14, 1978, the Licensing Board in Perkins ordered that the record with respect to the radon release issue be reopened, and that a hearing on the matter be held on May 16, 1978 with opportunity for cross-examination by Perkins Intervenors. On April 17, 1978, the Staff filed with the Perkins Board and parties five affidavits indicating that the Staff believed such affidavits to be adequate to dispose of the radon matter in absence of contrary evidence. The Staff noted that if the the Board decided that a hearing was required that the affidavits should be considered as its prefiled testimony.[2/]

On April 27, 1978, the Staff also served its five affidavits on all parties to the 17 cases pending before the Appeal Board on the radon issue. Dr. Kepford was served at that time with these affidavits, in connection with his participation in the Three Mile Island proceeding.

On May 3, 1978, Perkins Intervenors informed the Perkins Board in a Motion to Postpone Hearing that it had obtained the services of

2/ Four of these affidavits were the same as those filed in Three Mile Island in January and the fifth, Dr. Gotchy's, contained corrections of minor typographical errors and phrasing errors.

Dr. Kepford as an expert witness and indicated that Dr. Kepford had done "extensive research and is eminently qualified to give testimony ...." Counsel for Intervenors indicated in said Motion that counsel for Intervenors required additional time to educate himself and to consult with Dr. Kepford. Intervenors' counsel also indicated that there were various (unidentified) new matters and studies that needed to be studied by Intervenors' counsel and by Dr. Kepford and requested a postponement of hearing until after July 10, 1978. On May 4, 1978, Intervenors' counsel requested additional time for discovery (the information to be discovered was unidentified except for reference to "the information set out by Intervenors in Three Mile Island, Unit 2 (case 78-1160 of the District of Columbia Circuit Court), among other information, be included within the scope of discovery ...").

After a conference call among the parties and the Board, the Perkins Board in an Order dated May 10, 1978 granted in part Intervenors' request for additional time for preparation of Dr. Kepford's testimony, ruling that Dr. Kepford's direct testimony could be presented outside the presence of the Board by June 10, 1978. As noted in the Board Order, Dr. Kepford was to be absent from the country for about a month after June 16, 1978. With respect to Intervenors' request for additional time for discovery, the Board noted that the schedule they had established, permitting cross-examination of Staff and Applicant's witnesses, about two weeks before Intervenors' witnesses' testimony was to be served, largely obviated the need for additional discovery before presentation of Staff and Applicant testimony.

On May 16 and 17, 1978, the Staff and Applicant witnesses presented their evidence on the issue of radon release, and were extensively cross-examined by Intervenors (about 125 pages of the transcript) and by the Board (about 170 pages of the transcript).

On May 31, 1978, Perkins Intervenors served the parties with "Testimony of Dr. Chauncey Kepford on Behalf of the Intervenors, June 8, 1978 (Perkins 1, 2, and 3)."

Dr. Kepford's deposition was taken on June 8, 1978 on his testimony. At the deposition Perkins Intervenors also offered a document prepared by Dr. Kepford entitled, "Resource Consumption." Intervenors also offered 10 exhibits (marked A through J). Objections were offered to the "Resource Consumption" document and to certain of the exhibits. The Board, on June 29, 1978, ruled admissible the "Resource Consumption" document and ruled on each of the exhibits, admitting exhibits B, H, I, J and taking notice of C. It rejected the offer of exhibits A, D, E, F, and G as offered without foundation. The Board also sustained objections to certain portions of the redirect examination of Dr. Kepford.

2. Opportunity to Prepare Testimony - Contrary to the assertion by Intervenors that Dr. Kepford had less than one week to prepare testimony for the Perkins proceeding (Joint Filing, p. 6), Dr. Kepford's principal testimony was served (mailed from State College, Pennsylvania) on May 31, 1978. This is (a) some 28 days after Perkins Intervenors informed the Board that it had obtained Dr. Kepford's service as an expert witness, (b) some 21 days after the motion to postpone the hearing

set for May 16, 1978 was denied; (c) some 44 days after the Staff testimony was served on Perkins Intervenors;[3/] (d) some 20 days after Applicant's testimony was served on Perkins Intervenors; (e) some 20 days after Staff provided Perkins Intervenors (and the Board) with additional information prepared for the Pebble Springs case (which was used in cross-examination of the Staff but initially offered and accepted only in very limited part in the Perkins proceeding); and (f) some 14 days after Dr. Kepford had an opportunity, which he exercised, to cross-examine witnesses for Staff and Applicant.

In this light, it is clear that there is no substance to Intervenors' allegation that Dr. Kepford was deprived of adequate opportunity to prepare testimony for the Perkins proceeding.

3. Opportunity for Discovery - Despite the assertion that discovery was needed in the Perkins proceeding, and repeated by Intervenors in this Joint Filing, there is no specific indication of the nature of such discovery and why it may provide a contribution to the record over and above the investigation conducted by cross-examination.

Now, as well as in May during the course of the preparation for hearings in Perkins, something more specific than a generalized assertion of the

3/ It should also be noted that Dr. Kepford had virtually identical Staff documents some four months before his testimony was filed in Perkins (see note 2 above).

desire to undertake more discovery is required to demonstrate procedural deficiency. This is particularly true, in this instance, in light of the assertions by Perkins Intervenors of Dr. Kepford's familiarity with the matter of radon releases (see Motion to Postpone Hearing dated May 3, 1978; Tr. 2267-68; 2675-76), and the previous opportunities, which were exercised by Dr. Kepford in the Three Mile Island proceeding to obtain from the Staff a fairly extensive production of documents on the radon and related matters (see, for example, letters from Staff counsel to Dr. Kepford in Three Mile Island, dated June 14, 17 and 27, 1977) and Dr. Kepford's previous opportunity in the Three Mile Island case to cross-examine, at length (about 400 pages of transcript, June 7 and 8 and July 5, 1977), a principal Staff witness, Dr. Gotchy, on the subjects of radon and health effects.

4. Refusal by Perkins Licensing Board to Admit Certain Exhibits Proffered by Perkins Intervenors - Intervenors assert that the Perkins Board improperly refused to admit into evidence in Perkins five exhibits (A, D, E, F and G).[4/] The exhibits were refused on the grounds that no foundation had been laid for their admission. (Order dated June 29, 1978).

4/ A - Geological Survey Circular 779
D - Reprint from Origins of Human Cancer, entitled "Estimates of the Cancer Risk Due to Nuclear Electric Power Generation."
E - "Radiation Exposures of Hanford Workers Dying from Cancer and Other Causes"
F - Rebuttal Statement of John W. Gofman, May 26, 1978
G - Introduction, "Study of the Lifetime Health and Mortality Experience of Employees of ERDA Contractors," Final Report #13, July 31, 1977

The record is clear that Dr. Kepford's background (Tr. 2674-2710) was not sufficient in fields of health physics, biological effects of radiation or in medicine to sponsor and "vouch for" the truth and accuracy of the information contained in these documents. Perkins Intervenors offer no other qualified person to sponsor these documents. In fact, exhibit E was brought up initially during cross-examination of qualified Staff and Applicant witnesses and was not accepted as an authoritative work of probative value. Dr. Hamilton, Applicant's witness, whose qualifications in these fields are unquestioned, was pointed in his rejection of Mancuso, et al. (exhibit E) See Tr. 2273. Dr. Gotchy, the Staff witness, indicated only familiarity with the work and did not suggest that he accepted it as reliable probative evidence (see Tr. 2460, 2462-2463).5/

Again, it is manifest that there is no substance to Intervenors' assertion that there were procedural defects in the Perkins proceeding in the refusal of the Board to admit exhibits A, D, E, F and G.

Intervenors assert that the failure to include the rejected exhibits in the Perkins evidentiary record was improper under 10 CFR §2.743(e),

5/ It should be noted that Intervenors' Response at p. 4 is written so as to suggest that the Perkins Licensing Board Order of June 30, 1978 (sic) stated that Dr. Hamilton's testimony quoted "from a document which was not properly a part of the redirect examination which was then being conducted." That suggestion is erroneous. The statement of the Licensing Board contained in the Order dated June 29, 1978, at p. 6 was directed toward portions of Dr. Kepford's testimony that were rejected.

which requires that "[r]ejected exhibits, adequately marked for identification, shall be retained in the record." This rule assures that rejected exhibits are retained and are readily available to the appellate review tribunal. In the Perkins case, 10 CFR §2.743(e) is fully complied with. The transcript record of the Kepford deposition has bound into it all exhibits offered to the reporter.

However, with respect to Three Mile Island, Peach Bottom, and other proceedings covered by ALAB-480, the Appeal Board directed the Staff to serve upon all parties to all 17 proceedings the evidentiary record in the Perkins proceeding. (ALAB-480, p. 18). The rejected exhibits do not form part of the evidentiary record. Thus, in reproducing the Perkins record, exhibits rejected in their entirety were not reproduced and distributed to all parties. Lest there be some possible distortion, the Staff did not delete rejected pages of testimony in the reproduction process nor separate out portions of partially accepted material. We believe that the Staff reproduction and distribution of the Perkins evidentiary record, without wholly rejected exhibits, is consistent with the direction of the Appeal Board in ALAB-480. Upon notification by the Appeal Board that this is not correct and that it would prefer that the rejected exhibits, which are not part of the evidentiary record, be sent to all parties to all 17 proceedings, we will promptly do so (as we will do for any individual party who requests to be sent a copy of the deleted exhibits).

However, there can, of course, be no detriment to Three Mile Island or to Peach Bottom Intervenors from failure to receive a copy of the deleted exhibits, since Dr. Kepford, who filed the Intervenors' Joint Filing is fully aware of the content of these exhibits, which he offered as witness for Perkins Intervenors.

5. Refusal of the Licensing Board to Admit Certain Testimony by Dr. Kepford - Contrary to the Intervenors' assertion that Dr. Kepford's testimony was "censored," the transcript reproduced and distributed to all parties in the 17 proceedings covered by ALAB 480 contains every work reported by the Reporting Service. All statements, even those rejected as evidence by the Licensing Board are set forth in their entirety.

With respect to assertions that it was incorrect to reject such testimony, Intervenors assert that Dr. Kepford's statements were not improper "redirect" as characterized by the Licensing Board but simply a continued part of his "direct" examination. This is simply incorrect. Dr. Kepford's direct examination terminates on page 2739 of the Transcript of June 8, 1978; and for most of the material following page 2792, one searches in vain for a predicate in any of the cross-examination.

Moreover, much of the deleted information would not have been admissible direct examination; e.g., pages 2805-2807 is a reading from the first few pages of a document not admitted into evidence.

Intervenors assert that the Perkins Board had authorized the deleted statements in response to certain statements made by Staff counsel Scinto. Staff counsel Scinto, during the course of the presentation of Staff testimony, made certain comments in response to a concern voiced by a member of the Licensing Board as to whether there had been a Staff coverup of the discovery of an error in WASH-1248 (Tr. 2513). Mr. Scinto's comments were directed toward the assertion that there had been no deliberate attempt to hide information. He conceded that there was perhaps inadequate emphasis given to areas in which there were gaps in available information and inconsistencies in the treatment of various values, some of which were quantified and some not quantified. (Tr. 2513-2517). Mr. Scinto also indicated that once the Staff as a whole was really aware that an error existed in the values in Table S-3, the Staff worked to correct it, and did not go forward with further licensing proceedings until the error was assessed and we could inform the presiding boards. (Tr. 2524).

Dr. Kepford asked for an opportunity to respond to these assertions by Staff counsel and was offered such opportunity either by statements in the nature of comments or by testimony. Dr. Kepford, at his July 8, 1978 deposition, offered certain exhibits (H, I, and J) he asserted were in rebuttal to allegations made by Mr. Scinto. (Tr. 2721). These were accepted for this purpose by the Licensing Board (Order dated June 29, 1978). But in his proffered testimony, Dr. Kepford went far beyond a response to Staff counsel's assertion that there had been no Staff

coverup or attempt to hide errors from the Licensing Boards or the Commission. Dr. Kepford launched into a polemic which was directed in the main at attacking the Commission. It accused the Commission of refusing to accept new scientific information, of instituting dogma, of reinstituting the policies of Lysenko, of ignoring information and automatically refuting those who suggest that radiation effects are more severe than those of the preconceived notions of the Commission. These statements go far beyond the response to Staff counsel; nonetheless, they remain statements set forth in the record, as are those of Staff counsel, and are (properly) entitled to no weight as evidence.

Again, there is no substance to Intervenors' claim of procedural defect in the Perkins record.

B. Amplification of the Perkins Record

Even though the assertions of procedural defect in the Perkins record are unfounded, the Staff has nevertheless reviewed the Joint Filing to ascertain whether it asserts with some specificity how Intervenors deem the record to be substantively incomplete and if there are any proposals for remedying such alleged substantive defect.

In the main, Intervenors assert that the evidence on low level-low dose rate radiation does not adequately portray certain research information tending to show greater harm than the linear hypothesis. However, the only specific proposals for curing this alleged defect are to receive in evidence the rejected Perkins exhibits. This proposal would seem to have little or no value toward amplifying the record on effects of low level-low dose radiation. Simply receiving the documents into the record without opportunity for examination of the authors and their data base would appear to have little to contribute to the effort to determine whether there is in fact a serious question as to currently used health effects estimates which are derived from the BEIR Committee Reports. At the minimum, this would require an evidentiary presentation of some length on both sides to explore fully various assertions of inadequacy of the information derived from the BEIR Committee. Some of the Staff difficulties with the reports offered as exhibits E and G, for example, are discussed in the recent Staff report mentioned in Intervenors' Response at page 10. The report is publicly in the Public Document Room.

Beyond proposing this specific remedy of admitting the rejected Perkins exhibits, a proposal which we believe has no value, Intervenors make no other specific proposal concerning this matter. They do not propose to offer any witnesses to address any specific challenge to the health effects estimates used in the Perkins evidence. Rather, they simply

propose that Intervenors be given five months to search out such witnesses. The Staff does not believe that this is a reasonable remedy for such unsubstantiated assertions of inadequacy.

In addition to assertions concerning low level radiation effects, Intervenors also propose to include in the "Perkins record" two briefs filed with the Appeal Board in the Three Mile Island proceeding. The Staff's response to these briefs in the Three Mile Island proceeding sets forth our position as to the absence of merit of the allegations made with respect to the Three Mile Island proceeding. These assertions similarly have no value as supplements to the Perkins record relating to radon releases from the uranium fuel cycle.

PART II

The findings of the Perkins Board with respect to radon emissions and resultant health effects may be accepted generically. Such effects do not tip the balance against the operation of captioned facilities.

The first question to be addressed in response to numbered paragraph 4 of ALAB-480 is whether the Perkins evidentiary record supports the generic findings and conclusions of the Licensing Board respecting radon emissions in the mining and milling process and the resultant health effects. The Staff believes that the Perkins record is adequate to support these findings. All sides to the issue were effectively represented and the Licensing Board (including Dr. Jordan, who had earlier

raised the radon issue) took an active role in developing the record. We also submit that these findings are equally as applicable to the effects of the fuel cycle supporting the Peach Bottom 2 and 3 and Three Mile Island 2 facilities as that supporting Perkins.

With respect to "the amount of radon emissions," the Perkins Board in the Partial Initial Decision (PID) dated July 14, 1978 recognized the limitations in available data and the conservative nature of estimates, for example, with respect to open pit mines (PID para. 12-17) and with respect to stabilization of tailings piles (PID para. 31-32). However, in view of the very small nature of the health effects described in the testimony accepted by the Perkins Board, these limitations in emission data were not of significance to the Board's conclusion that radon releases and impacts therefrom are insignificant in striking the cost-benefit balance for the Perkins facilities.

The validity of the Perkins Board findings as to generic consideration of radon emissions is also supported by the findings on this issue by the Black Fox Licensing Board (PID dated July 24, 1978, para. 96-125). In that proceeding, Intervenors used a different expert witness, Dr. Pohl, whose general area of challenge had a somewhat different focus from that of Perkins Intervenors' witness and thus elicited generally more detail on issues of stabilization of piles and release from piles. Nonetheless, the conclusions of the Black Fox Licensing Board with respect to amounts of radon emission are quite similar overall to that of the Perkins Board and support the same conclusion that the resultant health effects are not significant in striking the cost-benefit balance.

On this basis, with due recognition to the limitations in available data and the conservative nature of various estimates, we propose that this Appeal Board adopt the findings of the Perkins Licensing Board on radon emissions and the resultant health effects. The Perkins Partial Initial Decision does have certain passages (for example, the background discussion in paragraph (1)) which are specific to the Perkins record. In all material respects, however, the Perkins Partial Initial Decision is applicable to these proceedings.

The second question to be addressed in response to numbered paragraph 4 of ALAB-480 is whether the radon emissions and resultant health effects as established in the Perkins record are such as to tip the NEPA balance against operation of the Peach Bottom 2 and 3 and Three Mile Island 2 facilities. The Perkins record demonstrates that the increase in natural background radiation associated with the mining and milling of an annual fuel requirement ("AFR") is so small, particularly in view of fluctuations in natural background radiation, as to be completely undetectable. (PID para. 51). Based upon its review of the evidence adduced, the Perkins Board concluded that there would be only a very minimal resulting impact on health effects. (PID para. 49). There was ample basis for the Licensing Board's conclusion, therefore, that the impact of the incremental radon is not significant. (PID para. 51). This very small incremental impact could not tip the cost-benefit balance against operation of the Peach Bottom 2 and 3 and Three Mile Island 2 facilities unless their records indicated that the costs and benefits were virtually in equipoise. The

Licensing Board in these proceedings has previously found, however, that the benefits of captioned facilities and operation of these facilities clearly outweigh the environmental and economic costs which will necessarily be incurred. (Peach Bottom Initial Decision, para. 35, 7 AEC 1022, at 1032[5/]; Three Mile Island, Unit 2 Initial Decision, para. 130, 6 NRC 1185, at 1226). The cost-benefit balance in these proceedings would not be tipped by the tiny increments associated with radon release from the uranium fuel cycle.

For the reasons set forth above, we request the Appeal Board to adopt the findings of the Perkins Licensing Board on radon emissions and resultant health effects. Based upon a consideration of the level of incremental impacts involved and the cost-benefit balance in this case, we further request the Appeal Board to find that the balance is not tipped against operation of these plants.

Respectfully submitted,

Joseph F. Scinto
Deputy Director, Hearing Division
Office of the Executive Legal Director

Dated at Bethesda, Maryland
this 15th day of September, 1978

5/ See note 4 of the Peach Bottom Initial Decision, 7 AEC 1022 at 1031, regarding the applicability of the Board's finding to Unit 2.

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	)	
METROPOLITAN EDISON COMPANY, ET AL.	)	Docket No. 50-320
	)	
(Three Mile Island Nuclear Station, Unit 2)	)	

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In the Matter of	)	
	)	
PHILADELPHIA ELECTRIC COMPANY	)	Docket Nos. 50-277
	)	50-278
(Peach Bottom Atomic Power Station, Units 2 and 3)	)	

CERTIFICATE OF SERVICE

I hereby certify that copies of "NRC STAFF'S ANSWER TO INTERVENORS' JOINT MOTION FILING DATED JULY 27, 1978" in the above-captioned proceeding have been served on the following by deposit in the United States mail, first class, or, as indicated by an asterisk, through deposit in the Nuclear Regulatory Commission's internal mail system, this 15th day of September, 1978:

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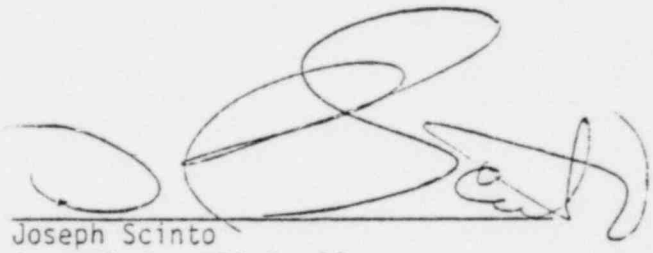

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