UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

BEFORE ADMINISTRATIVE JUDGES

Lawrence Brenner, Chairman
Dr. Richard F. Cole
Dr. Peter A. Morris

In the Matter of	:	Docket Nos. 50-352-OL 50-353-OL
PHILADELPHIA ELECTRIC COMPANY	:	
(Limerick Generating Station, Units 1 and 2)	:	

REPLY OF CITY OF PHILADELPHIA TO RESPONSES OF APPLICANT AND STAFF TO CITY OF PHILADELPHIA ISSUES

The City of Philadelphia hereby files its Reply to the Answer of Applicant filed February 13, 1984 and to the Response by the Staff of the Nuclear Regulatory Commission filed February 24, 1984 to the revised Issues of Concern of the City of Philadelphia.

Preliminarily, it should be noted that PECO erroneously argues that "the sole responsibility of the Commission and its licensing boards is to determine whether these plans are capable of being implemented" (Applicant's Answer at p. 4.) To the contrary, as a matter of law, there is a dual standard of review: whether the plans are adequate and whether there is reasonable assurance that they can and will be implemented. An analysis of implementability without a consideration of adequacy would be a meaningless exercise by this Board. The thrust of the City's concerns is that the lack of detail presented in the State Plan renders that Plan both inadequate and incapable of implementation.

City-1: Applicant and Staff incorrectly argue that NUREG-0654 does not require the degree of specificity which the City has sought in City -1. Applicant further argues, without foundation, that NUREG-0654 does not require public information availability, that nothing in NUREG-0654 requires identification of the type, number or availability of personnel to implement the particular protection procedures outlined in NUREG-0654, Section II, Criterion J. 11.

Applicant conspicuously ignores the standard set forth in 10 CFR 50.47(a)(2) that State and local emergency plans be adequate and that there be reasonable assurance that they can be implemented. 10 CFR 50.47(b)(10) specifically imposes, inter alia, the requirement, that

> "...protection actions for the ingestion exposure pathway EPZ appropriate to the locale have been developed." (Emphasis supplied.)

Finally, 10 CFR 50.47(c)(2) states that

> "The plans for the ingestion pathway shall focus on such actions as are appropriate to protect the food ingestion pathway."

Applicant and Staff further overlook the planning standards set forth in NUREG-0654, Section II.A at pp. 31 et seq., which require, inter alia, that each Plan provide for the assignment of responsibilities for emergency response by the nuclear facility licensee and by the State and local organizations within the Emergency Planning Zones, and further that "...the emergency responsibilities of the various supporting organizations have been established, and each principal response organization has staff to respond and to augument its initial response on a continuous basis." (Emphasis supplied.)

It can thus be seen that NUREG-0654 clearly requires emergency planning in both the plume and ingestion EPZs, and that each principal response organization specifically identify by title the necessary response staff.

Accordingly, considering the nature of the Ingestion Exposure Pathway EPZ, which includes the City of Philadelphia, it is entirely appropriate, and NUREG-0654 requires, that the Board make certain that the particular State response agencies involved here have sufficient staff to respond and to augument its initial response on a continuous basis.

It is enlightening to note that with regard to the sufficiency and adequacy of staffing, Applicant cavalierly states, "If need be, personnel could be brought into the affected area from neighboring States as well as federal agencies." It is submitted that it is precisely this vague and haphazard approach to planning which the Regulations and NUREG-0654 seek to avoid. That protective action may not need to be as immediate in the Ingestion Exposure Pathway as in the Plume Exposure Pathway does not mean that absence of adequate staffing and planning is condoned by the applicable regulations, as Applicant would have the Board find.

Applicant further incorrectly suggests that there are no requirements in NUREG-0654 mandating the availability of public information. On the contrary, NUREG-0654, Section D, F. Emergency Communication Paragraphs 1 and 1B at p. 47, require, inter alia, that the communication plans for emergencies shall include organizational titles and alternates for both ends of the communication links; that each organization establish reliable primary and backup means of communication for licensee, local and State response organizations: that such systems be compatible with one another; and that each plan shall include "provision for communications with contiguous State/local governments within the Emergency Planning Zones." (Emphasis on plurality of Zones supplied.). The State Plans do not contain such systems as required by NUREG-0654, and therefore is a legitimate issue of concern to the City of Philadelphia.

City-2: Applicant and Staff similarly criticize City-2 by arguing that NUREG-0654 does not require more than mere identification of procedures, and in particular, Applicant states that, "manpower and capability levels need not be stated because it can be rationally assumed that, in the event of a radiological emergency, such resources can be promptly marshalled." This response again demonstrates an emergency planning attitude by Applicant of "Don't worry, you can trust us. We'll deal with it on an ad hoc basis when the situation arises." This cannot be sufficient under the law. As stated above, NUREG-0654, Section II.A. at pp. 31 et seq., clearly requires assurances of adequate staffing of response organizations in both planning zones. NUREG-0654 at pp. 40-41 is not limited solely to the Plume Exposure Pathway in dealing with emergency responses support and resources, but requires that arrangements for requesting and using assistance resources have been made and other organizations capable of augmenting the planned response have been identified. The emergency plans must be specific in this planning area and each offsite organization, including the State, must identify facilities, organizations or individuals which can be relied upon in an emergency to provide assistance. By reason of the fact that the State Plan fails to provide for the foregoing, this issue is a legitimate concern to the City.

City-3: The City's concern here is that the State plan does not provide guidance for protecting water from contamination and preventing use. Staff agrees that this concern should be an issue in the case. Applicant alleges that there is no basis under NUREG-0654for inclusion of this issue. NUREG-0654, Section II, J. 11 at p. 64, provides that

> Each State shall specify the protective measures to be used for the ingestion pathway, including the methods for protecting the public from

> consumption of contaminated foodstuffs. This shall include criteria for deciding whether dairy animals should be put on stored feed. The plan shall indentify procedures for detecting contamination, for estimating the dose commitment consequences of uncontrolled ingestion, and for imposing protection procedures such as impoundment, decontamination, processing, decay, product diversion and preservation. (Emphasis supplied.)

Thus, this Section of NUREG-0654, specifically requires that the State plan "...shall identify procedures...for imposing protection procedures". The present Plan is inadequate in this regard especially with respect to impoundment and diversion (prevention of use), decontamination (recovery) and preservation (protection of existing supply).

Applicant asserts at p. 60 of its Answer that under NUREG-0654 the protective responses are required only for detection purposes, and need not address the measures suggested by the City. This assertion is patently wrong. To the contrary, protection of existing supplies and prevention of use of contaminated water and recovery by way of decontamination are specific goals of NUREG-0654. Merely by listing the planned protection measures without identifying the means of implementation of those measures does not meet the requirement of NUREG-0654, Section II, J. 11. As more fully set forth hereinafter in City-6 at p. 8 and 9, The Manual of Protective Action Guides and Protective Actions for Nuclear Incidents, (hereinafter "PAGs"), at pages 1.30, 1.46, 1.47 and 1.48 specifically concerns itself with protection of existing water supplies by prevention of contamination as well as providing for alternative sources of water. In this case, the State plan does not identify the procedures for such implementation and thus is a legitimate area of concern to the City.

City-4: The concern of the City here is that the State plan fails to specifically include sampling, testing and reporting contamination of aquatic life in the food chain. Staff does not object to the Board's consideration of this issue, but the Applicant objects, arguing that City-4 is vague and lacking in specificity. Nothing could be more specific: the State Plan fails to provide for aquatic sampling, testing and reporting concerning fish which are part of the local food chain. NUREG-0654, Section I, D at pp. 9-11 specifically provides

> b. Ingestion exposure pathway -- The principal exposure from this pathway would be from ingestion of contaminated water or foods such as milk, fresh vegetables or aquatic foodstuffs. The duration of potential exposure could range in length from hours to months. For the ingestion exposure pathway, the planning effort involves the identification of major exposure pathways from contaminated food and the associated control and interdiction points and methods. (Emphasis supplied.)

Since NUREG-0654 contemplates that State, rather than local, response organizations will be principally responsible for the planning associated with the ingestion exposure pathway, the failure of the State Plan to adequately address this issue is a matter of legitimate concern to the City of Philadelphia.

City-5: Staff and Applicant assert that this issue of concern lacks specificity and goes beyond Commission Regulations. However, NUREG-0654, §I, D. 4. at pp. 14 et seq. specifically recognizes that for atmospheric releases from nuclear power facilities three dominant exposure modes exist:

> (a) whole body (bone marrow) exposure from external gamma radiation and from ingestion of radioactive material;
>
> (b) thryoid exposure from inhalation or ingestion of radioidines; and

> (c) exposure of other organs (e.g., lung) from inhalation or ingestion of radioactive materials. (Emphasis supplied.)

Moreover, as stated in NUREG-0654 at p. 6,

> The overall objective of emergency response plans is to provide dose savings (and in some cases immediate life saving) for a spectrum of accident that could produce offsite doses in excess of Protective Action Guides (PAGs). (Footnote omitted.)

Applicant incorrectly assumes that the City's concern is limited to the distribution and administration of KI, and Staff asserts that the City's issue lacks specificity. The City concerns are, in fact, broader and very specific. NUREG-0654, Section II, L. Medical and Public Health Support at p. 69 requires that the State plan contain specific arrangements for local and backup hospital and medical services, including assurance that persons providing these services are adequately prepared. This Planning Standard is not specifically limited under NUREG-0654, Section II, L. to the Plume Exposure Pathway, and therefore must be addressed in the State Plan for the Ingestion Exposure Pathway. The failure of the State Plan to provide other protective measures to prevent ingestion exposure to the thyroid, whole body, and bone marrow are discussed in the other City concerns 1 through 12 and in this Reply. Other specific pre-exposure protective measures are more fully described in City-6 of this Reply, at pages 7-9. Such other measures include, but are not limited to, designation of critical users of water and substitution of beverages. (PAGs, pages 1.47 and 1.48) In this regard, the State Plan fails to meet the NUREG-0654 requirements, and is a legitimate matter of concern to the City.

City-6: The City contends that the State Plan fails to provide reasonable or adequate guidelines, methods and procedures for preventing the distribution and consumption of contaminated processed food. Applicant, has merely responded that the present guidelines are adequate and Staff asserts a lack of specificity. However, NUREG-0654, Section II, J, 9. at p. 61 provides that

> Each State and local organization shall establish a capability for implementing protective measures based upon protective action guides and other criteria. This shall be consistent with the recommendation of...DHEW (DHHS)/FDA regarding radioactive contamination of human food and animal feeds as published in the Federal Register of December 15, 1978 (43 FR 58790). (Emphasis supplied.)

The present Plan simply does not establish a capability for implementing protective measures based upon protective action guides as required by NUREG-0654, Section II, J, 9.

Moreover, Section II, J. 11 at p. 64 of NUREG-0654 specifically provides

> Each State shall specify the protective measures to be used for the ingestion pathway, including the methods for protecting the public from consumption of contaminated foodstuffs. This shall included criteria for deciding whether dairy animals should be put on stored feed. The plan shall identify procedures for detecting contamination, for estimating the dose commitment consequences of uncontrolled ingestion, and for imposing protection procedures such as impoundment, decontamination processing, dairy, product diversion and preservation. (Emphasis supplied.)

The State Plan, with respect to the Ingestion Exposure Pathway, also fails to include criteria for deciding whether dairy animals should be placed on stored feed. The State Plan does not identify as it must, the procedures, for imposing protection measures. A mere listing of the protective measures available does not meet the requirement of specifically identifying the

procedures to impose protective measures. A mere issuance of an advisory to food processors in no way assures that contaminated foodstuffs will not be introduced into the food chain.

To be legally adequate, the Plan must be based upon the protective action guides mentioned in NUREG-0654, Section II, J. 9 at page 61 and at page 6, footnote 3 of NUREG-0654. These guides are set forth with specificity in the PAGs at page 1.30 and recommend suggested action to be taken in the Ingestion Exposure Pathway as follows:

Approximate Initiation Time	Exposure Pathway	Action to be Initiated
4-48 hours	milk	take cows off pasture, prevent cows from drinking surface water, quarantine contaminated milk.
	harvested fruits and vegtables	wash all produce, or impound produce.
	drinking water	cut off contaminated supplies, substitute from other sources.
	unharvested produce	delay harvest until approved.
2-14 days	harvested produce	substitute uncontaminated produce.
	milk	discard or divert to stored products, such as cheese.
	drinking water	filter, demineralize.

Morever, the PAGs at page 1.46 provide that in order to avoid population contamination from ingestion exposure, the response planner should with respect to food control, consider:

(1) Prohibition on use and substitution from uncontaminated supplies;.

(2) Decontamination;

(3) Impoundment, storage and allowance for decay of radiation levels; and

(4) Destruction to prevent consumption.

As to water control, the PAGs at pages 1.47 and 1.48 provide that the planner consider protective actions to:

(1) Prevent contamination;

(2) Decontaminate water;

(3) Condemn of use of water for consumption;

(4) Provide alternative sources;

(5) Ration supplies;

(6) Substitute other beverages;

(7) Import water from other uncontaminated areas; and

(8) Designate critical users.

It is clear from these guidelines, that the State Plan is inadequate in not establishing a capability for implementing protective measures and in not establishing criteria for imposing protective measures consistent with and based upon the PAGs. The City is legitimately concerned that these matters are addressed in the final Plan.

City-7: The Plan provides no guidance for recovery or relaxation of protective actions in the Ingestion Exposure Pathway. Applicant and Staff erroneously argue that this concern is misplaced based upon their too narrow interpretation of "recovery" and their view that, such planning need only involve the Plume

Exposure Pathway. It is submitted that nothing contained in 10 CFR § 50.47(b)(13) relieves a recovery planning responsibility in the Ingestion Exposure Pathway. That Section provides

> (b) The onsite and, except as provided in paragraph (d) of this section, offsite emergency response plans for nuclear power reactors must meet the following standards:
>
> * * *
>
> (13) General plans for recovery and reentry are developed. (Emphasis supplied)

Moreover, NUREG-0654, Section II, J. 11 at p. 64 specifically provides, inter alia, that the plan shall identify procedures for decontamination and processing. Certainly, decontamination and processing can and should be considered as in the nature of "recovery" measures. See also, 47 Fed. Reg. 47073, 47083(h)(1)(V). Additionally, the PAGs at page 1.30 refer to demineralization of drinking water. This, too, is a "recovery" action. The PAGs at pages 1.46, 1.47, and 1.48 also refer to decontamination of food and water which must be considered a "recovery" effort.

The PAGs at page 1.48 also provide recommendations to the emergency planner concerning the lifting of food protection controls when the health risks have been adequately reduced. At pages 1.49 and 1.50 of the PAGs, recommendations concerning decontamination of water, milk and food are set forth.

Although some ad hoc decision-making may be necessary and minute detailed advance planning unfeasible, the State plan should at least provide some general criteria and guidance on the recovery actions above mentioned, as well as when and under what circumstances relaxation of protective actions in the Ingestion Exposure Pathway may be instituted. The present State Plan provides no such guidance, and, therefore, fails to address a matter of legitimate concern to the City of Philadelphia.

City-8: The Staff apparently agrees that this general issue should be considered, but argues that as presented it lacks specificity. Applicant also argues that this issue lacks specificity and constitutes an attack upon the Regulations. Both Staff and Applicant are incorrect. NUREG-0654, Section II, A at page 31 applies as aforesaid to both emergency planning zones in dealing with assignment of emergency responsibilities to various supporting organizations.

Specifically, NUREG-0654, Section II, O, deals with Emergency Response Training of those who may be called upon during an emergency. Contrary to Applicant's position, this training is not limited to personnel to be called upon during emergencies only within the Plume Exposure Pathway. It is clear that each response organization must assure the training of appropriate individuals. In the Ingestion Exposure Pathway, the State is the responsible organization.

Appendix 19 of the State Plan dealing with Training is inadequate in that:

1) The Appendix fails to adequately define the term "affected counties" so as to include counties such as Philadelphia in the Ingestion Exposure Pathway.
2) Training provisions of Sections III and IV of the Appendix appear to address themselves to the Plume Exposure Pathway and are not clear as to whether counties such as Philadelphia in the Ingestion Exposure Pathway, are included.
3) Section V of the Appendix of Annex E deals only with training for the agricultural community in the Ingestion Exposure Pathway, and fails to provide for training of personnel to deal with water supply and aquatic life protection. The plans do not provide

for the training of personnel to measure, evaluate, lessen, and prevent radioactive contamination of the water supply.

4) Section VI of the Appendix agains refers to "affected counties" without providing a definition of that terminology. Moreover, Section VII does not clearly specify whether the City of Philadelphia is intended to be included.

Moreover, NUREG-0654, Section II, N at page 71 et seq., provides, inter alia, for periodic exercises and drills to evaluate emergency response capabilities and to develop and maintain skills. 44 CFR §3350.9(5) provides that Ingestion Exposure Pathway emergency planning exercises should be conducted at least every five years. This is a minimum requirement and certainly would not prevent this Board from ordering more frequent exercises here, in view of the enormity and diverse nature of the City population in the Ingestion Exposure Pathway.

In fact, NUREG-0654, Section II, N(2)(a) requires that communication drills within the Ingestion Exposure Pathway EPZ should be tested quarterly. NUREG-0654, Section II, N(2)(d), also requires annual drills both on-site and off-site which "shall include collection and analysis of all sample media (e.g., water, vegetation, soil and air...)." Thus, the regulators clearly contemplated Ingestion Exposure Pathway drills and exercises in certain areas more often that the outside five (5) year requirement.

Appendix 20 of the State Plan does not indicate whether the City of Philadelphia is included in the annual full-scale exercise therein provided. Although that exercise is defined as a test, inter alia, of procedures, training, resources, staffing levels and qualifications, and equipment adequacy, Appendix 17 of Annex E does not set forth the resources, staffing levels and

qualifications and equipment required for emergency testing in the Ingestion Exposure Pathway. Likewise, while Appendix 20 provides for drills of communications in the Ingestion Exposure Pathway, Appendix 17 does not specify the communications channels and equipment to be utilized in the Ingestion Exposure Pathway. The same failure is applicable to the radiological monitoring drills mentioned in Appendix 20. No guidance is provided as to methodology and criteria for collection and analysis of water, vegetation, soil, and air samples.

It is submitted that the Plan should provide that exercises and drills in the Ingestion Exposure Pathway should and must be done as soon as possible after an Emergency Plan is adopted. It is certainly not in the public interest to have a Plan in place and not test its feasibility until five years later, as Applicant apparently contends. The City is legitimately concerned that five years later may well be too late.

City-9: The City is concerned that no emergency measures and implementation agreement exists between the Applicant and the Commonwealth. Staff does not object to the admission of this issue. Applicant opposes on the incorrect assumption that NUREG-0654 Section IIA(3) at p. 32 applies only the Plume Exposure Pathway. This section in fact applies to both pathways zones:

> Each plan shall include written agreements referring to the concept of operations developed between Federal, State, and local agencies and other support organizations having an emergency response role within the Emergency Planning Zones. The agreements shall identify the emergency measures to be provided and the mutually acceptable criteria for their implementation, and specify the arrangements for exchange of information. (Emphasis supplied)

Since without an agreement between Applicant and the Commonwealth there can be no assurance that the necesary protection measures will be taken in an emergency. The failure of the Plan to contain such an agreement is a matter of legitimate concern to the City.

City-10: The City is concerned that Implementing Procedures EP-318 and EP-319 do not designate who is responsible to perform the measurements and calculations designated therein and do not provide for informing appropriate persons downsteam of the results thereof. Both Staff and Applicant object to inclusion of this issue. One supposed basis for objection is that this concern involves on-site planning and was late filed. It must be noted, however, that the City only received PECO Emergency Plan, Implementing Procedures EP-318 and EP-319 under date of December 12, 1983, (See Exhibit "A" attached), which was after the June 10, 1983 date established for filing on-site emergency planning issues. It was therefore impossible for the City to file this concern prior to the on-site emergency planning contention due date. There are no other parties of record in this proceeding representing the interests of the City of Philadelphia in Ingestion Exposure Pathway, and therefore, there are no other means whereby the interests of the City of Philadelphia can be protected. The inclusion of this item in the proceeding will not unduly broaden the issues and will assist in the development of a sound record.

Applicant cites the Waterford case, 17 N.R.C. at 1106-7, to support its further position that implementing procedures cannot be the subject matter of a contention. Applicant misreads this precedent. In Waterford, a complaint concerning the non-finality of implementing procedures was adjudged to be an impermissable challenge to the Commissions regulations. The City here is not raising an issue of concern as to finality, but as to clarity. While the

"finality" of implementing procedures may not be required for a "reasonable assurance" finding, clarity is a necessary ingredient. Moreover this hearing will not become bogged down with litigation concerning this detail because Applicant itself has stated that "carrying out EP-318 and EP-319 is part of the responsibilities of the Limerick Dose Assesment Team." One wonders why Applicant does not simply agree to amend EP-318 and EP-319 to change the "none" under the "Responsibiilities" heading to the "Limerick Dose Assessment Team", and include the references to other pertinent applicable procedures, Instead Applicant opposes the City's attempt at clarification, and creates needless litigation.

City-11: The City expressed its concern that EP-287 provides no information on what levels of contamination of the Schuylkill River will warrant notification to the City and other downstream users. Staff agrees that this issue should be considered. Applicant again says that this concern is a late file on-site contention. The City only received this Implementation Procedure on or after December 30, 1983. Therefore, the criteria for late-filing of this issue, and the reasons for Board consideration of this issue are precisely the same as those set forth in City-10 above. (See Exhibit "B" attached.) Applicant also argues that reference should be made to EP-210 and EP-312 in order to obtain clarification of EP-287. In order to provide rapidity of response, EP-210 and EP-312 should be included as a reference in EP-287. Again, the City wonders why Applicant flatly refuses to clarify this point, but rather seeks a course of unnecessary litigation.

City-12: The City's concern here is that the State Plan does not provide reasonable assurance of implementation because there are no FEMA/EPA standardized protective action guides relating to injestion exposure. Both Staff and Applicant oppose consideration of this issue. However, NUREG-0654 Section II J (9) requires, inter alia, that the State "... shall establish a capability for implementing protective measures based upon Protective Action Guides...." (Emphasis supplied.) Moreover, at NUREG-0654, Section I, D(1) at p. 6 specifically provides that

> The overall objective of emergency response plans is to provide dose savings (and in some cases immediate life savings) for a spectrum of accidents that could produce off-site doses in excesses of Protective Action Guides (PAGs). (Emphasis supplied.)

These PAGs are referred in footnote 3 on p. 6 of NUREG-0654. The September 1975 PAGs were revised and now appear as TD-12 under date of September 1981. Chapters 3 and 4 which relate to PAGs for exposure from foodstuffs or water, and from material deposited on property, respectively, are effectively nonexistent containing the notation "(Guidance to be Developed)". The State Plan is required by the NUREG above-quoted to be based upon the PAGs. Since the relevant 1981 PAGs are effectively nonexistent, the State Plan, of necessity, cannot be based upon those PAGs as required by NUREG-0654. Even the guidance provided by 47 Fed. Reg. 47073 (October 22, 1982) does not appear to have been the basis for the State Plan in the Ingestion Exposure Pathway since the City is not aware of any revisions to Appendix 17 of Annex E issued by the State subsequent to October 22, 1982.

Accordingly, the State plan is inadequate on this point because it does not contain and is not based upon the standardized protective action guidance for exposure from foodstuffs or water, nor is there protective action

guidance for exposure from radioactive material deposited on property or equipment as set forth in The Manual of Protection Action Guides and Protection Actions for Nuclear Incidents (TD-12, September 1981).

WHEREFORE, the City of Philadelphia respectfully requests that the Board order the relief requested in the City's revised Issues of Concern.

Respectfully submitted,

CITY OF PHILADELHIA

BARBARA W. MATHER
City Solicitor

TYLER W. WREN
Divisional Deputy City Solicitor

MARTHA W. BUSH
Deputy City Solicitor

Herbert Smolen

HERBERT SMOLEN
Deputy City Solicitor

PHILADELPHIA ELECTRIC COMPANY

2301 MARKET STREET

P.O. BOX 8699

PHILADELPHIA, PA. 19101

(215) 841-5001

SHIELDS L. DALTROFF
VICE PRESIDENT
ELECTRIC PRODUCTION

December 12, 1983

Re: Docket Nos. 50-352
50-353

Mr. A. Schwencer, Chief
Licensing Branch No. 2
Division of Licensing
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Dear Mr. Schwencer:

Enclosed are two copies of Limerick Generating Station Emergency Plan Implementing Procedures. These procedures are submitted per regulations in 10 CFR 50, Appendix E, Section V.

The procedures being submitted are the following:

EP-110, Rev. 0	EP-307, Rev. 0
EP-208, Rev. 0	EP-312, Rev. 0
EP-221, Rev. 0	EP-313, Rev. 0
EP-251, Rev. 0	EP-318, Rev. 0
EP-252, Rev. 0	EP-319, Rev. 0
EP-304, Rev. 0	EP-401, Rev. 0
EP-305, Rev. 0	EP-500, Rev. 0

Pursuant to Section 2.790 of the Commission's regulations, it is hereby requested that the telephone numbers listed in procedures EP-252, EP-304, EP-305, EP-312 be withheld from public disclosure. An affidavit setting forth the grounds in support of this request is attached hereto.

EXHIBIT A

Two copies have been sent under separate cover to the Document Control Desk.

Very truly yours,

Enclosure

cc: Document Control Desk
U.S. Nuclear Regulatory Commission
Washington, DC 20555

Site Inspector - Limerick Generating Station

cc: Judge Lawrence Brenner (w/enclosure)
Judge Peter A. Morris (w/o enclosure)
Judge Richard F. Cole (w/o enclosure)
Troy B. Conner, Jr., Esq. (w/enclosure)
Ann P. Hodgdon, Esq. (w/enclosure)
Mr. Frank R. Romano (w/o enclosure)
Mr. Robert L. Anthony (w/enclosure)
Mr. Marvin I. Lewis (w/enclosure)
Ms. Phyllis Zitzer (w/enclosure)
Charles W. Elliott, Esq. (w/o enclosure)
Zori G. Ferkin, Esq. (w/enclosure)
Mr. Thomas Gerusky (w/o enclosure)
Director, Penna. Emergency Management Agency (w/o enclosure)
Mr. Steven P. Hershey (w/enclosure)
Angus Love, Esq. (w/enclosure)
Mr. Joseph H. White, III (w/enclosure)
David Wersan, Esq. (w/o enclosure)
Robert J. Sugarman, Esq. (w/o enclosure)
Martha W. Bush, Esq. (w/enclosure)
Spence W. Perry, Esq. (w/o enclosure)
Jay M. Gutierrez, Esq. (w/o enclosure)
Atomic Safety & Licensing Appeal Board (w/o enclosure)
Atomic Safety & Licensing Board Panel (w/o enclosure)
Docket & Service Section (w/enclosure)

COMMONWEALTH OF PENNSYLVANIA :

: ss.

COUNTY OF PHILADELPHIA :

S. L. Daltroff, being first duly sworn, deposes and states as follows:

1. He is Vice President of Philadelphia Electric Company (hereinafter referred to as the "Company"); he is authorized to execute this Affidavit on behalf of the Company; and he has reviewed:

EP-252, Rev. 0
EP 304, Rev. 0
EP-305, Rev. 0
EP-312, Rev. 0

(hereinafter referred to as "the Documents"), and knows the contents thereof.

2. The part of the Documents which are sought to be withheld from public disclosure is the listing of the home telephone numbers and home addresses of employees of the Company, direct-line work telephone numbers of employees of the Company which are not listed in public telephone directories, and home and work numbers of emergency response support personnel and organizations.

3. To the best of his knowledge, information and belief, the telephone numbers and addresses set forth in the

Documents have been treated as confidential information and have been withheld from public disclosure by the Company.

4. The home telephone numbers and home addresses in the Documents should be considered by the Nuclear Regulatory Commission as confidential and proprietary information and be withheld from public disclosure on the grounds that disclosure of the home telephone numbers and home addresses of the employees of the Company and emergency support personnel could constitute an unwarranted invasion of the personal privacy of the individuals involved, disclosure of the work telephone numbers of the Company's employees and of the emergency response personnel and organizations could adversely affect the capability of prompt notification in the event of an emergency; such disclosure is not required in the public interest; and such disclosure could adversely affect the interests of the Company and its ability to effectively implement the notification requirements of the Emergency Plan Procedures.

Subscribed and sworn to
before me this 1st day
of [illegible]

Notary Public

JUDITH Y. FRANKLIN
Notary Public, Phila., Phila. Co.
My Commission Expires July 28, 1987

11/30/83

PHILADELPHIA ELECTRIC COMPANY
LIMERICK GENERATING STATION
EMERGENCY PLAN IMPLEMENTING PROCEDURE

EP-318 LIQUID RELEASE DOSE CALCULATIONS METHOD FOR DRINKING WATER

1.0 PURPOSE

The purpose of this procedure is to provide the calculation method for estimates of population exposure due to the ingestion of drinking water at various locations downstream of the plant.

2.0 RESPONSIBILITIES

None

3.0 APPENDICES

3.1 EP-318-1 Citizen Utilities Home Water Company Intake

3.2 EP-318-2 Phoenixville Water Intake

3.3 EP-318-3 Philadelphia Suburban Water Company Intake

3.4 EP-318-4 Norristown Water Intake

3.5 EP-318-5 Philadelphia Belmont Water Intake

4.0 PREREQUISITES

None

5.0 SPECIAL EQUIPMENT

None

6.0 SYMPTOMS

6.1 An actual or potential liquid release of radioactive material into the Schuylkill River.

7.0 ACTION LEVEL

7.1 This procedure shall be implemented when the criterion of section 6.0 is met.

8.0 PRECAUTIONS

None

9.0 PROCEDURE

9.1 The following assumptions were utilized in this calculation:

9.1.1 The Dose Conversion Factor is based on the most limiting group (adult, teen, child, infant) using dose factors and consumption rates in Reg. Guide 1.109.

Adult	730 l/yr
Teen	510 l/yr
Child	510 l/yr
Infant	330 l/yr

9.1.2 The Decay Factor is based on the decay of the isotope over the transit time plus 12 hours (time to reach the population via water system per Reg. Guide 1.109).

9.1.3 The total dose commitment is the dose which an individual would receive after drinking water with the radionuclides present at the concentrations calculated to exist at the entrance to the water plant for a period equal to the duration of the release. For example, if the release lasted 12 hours, the individual is postulated to consume 1/2 of his average daily water intake at the diluted concentrations.

9.2 Obtain grab sample results on the concentration of Co-60, I-131, Cs-134 and Cs-137 released, from the Chemistry Sampling and Analysis Team Leader.

9.3 For each location of interest, enter the concentration of Co-60, I-131, Cs-134 and Cs-137 in uCi/cc released and the release duration in hours on the appropriate appendix.

If the sample was taken prior to entering the Cooling Tower Blowdown Line, a diluted concentration must be determined by the following calculation:

$$\text{Concentration Released } \left(\frac{\mu Ci}{ci}\right) = \text{concentration } \left(\frac{\mu Ci}{cc}\right) \times \frac{\text{Release rate to Blowdown Line}}{\text{Blowdown line flow rate}}$$

9.4 Perform the calculation in each appendix for each location of interest to estimate the dose in millirem for the liver, whole body and thyroid.

9.5 Report results to the Dose Assessment Team Leader.

10.0 REFERENCES

10.1 EROL 2.1.3.6 Surface Water Use

10.2 EROL 5.2.4.1 Liquid Pathways

10.3 EROL Appendix 5.2A Radiological Dose Model-Liquid Effluents

10.4 Reg. Guide 1.109 Rev. 1 Calculation Of Annual Doses To Man From Routine Releases Of Reactor Effluents For The Purpose Of Evaluating Compliance With 10 CFR Part 50, Appendix I

APPENDIX EP-318-1 CITIZEN UTILITIES HOME WATER COMPANY INTAKE

		Dose Conversion Factor (mR/hr / uCi/cc)	X Concentration (uCi/cc)	X Decay Factor	=
Co-60	Liver	406		1.0	
	Whole Body	959			
I-131	Liver	1591		.95	
	Whole Body	700			
	Thyroid	5.23P5			
Cs-134	Liver	2.64P4		1.0	
	Whole Body	1.01P4			
Cs-137	Liver	2.30P4		1.0	
	Whole Body	5942			

+

	Schuylkill River Usage Factor	X Release Duration (hrs)	X Mixing Factor	X = Dose (mR)
Liver				
Whole Body	.48		.0118	
Thyroid				

Date: _____ Initials: _____

APPENDIX EP-318-2 PHOENIXVILLE WATER INTAKE

		Dose Conversion Factor (mR/hr / uCi/cc)	X	Concentration (uCi/cc)	X	Decay Factor	=
Co-60	Liver	406				1.0	
	Whole Body	959					
I-131	Liver	1591					
	Whole Body	700				.92	
	Thyroid	5.23P5					
Cs-134	Liver	2.64P4				1.0	
	Whole Body	1.01P4					
Cs-137	Liver	2.30P4				1.0	
	Whole Body	5942					

	Schuylkill River Usage Factor	X	Release Duration (hrs)	X	Mixing Factor	X	= Dose (mR)
Liver							
Whole Body	1.0				.0118		
Thyroid							

Date: _____

APPENDIX EP-318-3 PHILADELPHIA SUBURBA WATER COMPANY INTAKE

		Dose Conversion Factor (mR/hr / uCi/cc)	X	Concentration (uCi/cc)	X	Decay Factor	=
Co-60	Liver	406				1.0	
	Whole Body	939					
I-131	Liver	1591				.90	
	Whole Body	700					
	Thyroid	5.23P5					
Cs-134	Liver	2.64P4				1.0	
	Whole Body	1.01P4					
Cs-137	Liver	2.30P4				1.0	
	Whole Body	5942					

	Schuylkill River Usage Factor	X	Release Duration (hrs)	X	Mixing Factor	X	= Dose (mR)
Liver							
Whole Body	.22				.0149		
Thyroid							

Date: _____

APPENDIX EP-318-4 NORRISTOWN WATER INTAKE

		Dose Conversion Factor (mR/hr per uCi/cc)	X	Concentration (uCi/cc)	X	Decay Factor	=
Co-60	Liver	406				1.0	
	Whole Body	959					
I-131	Liver	1591					
	Whole Body	700				.87	
	Thyroid	5.23P5					
Cs-134	Liver	2.64P4				1.0	
	Whole Body	1.01P4					
Cs-137	Liver	2.30P4				1.0	
	Whole Body	5942					

	Schuylkill River Usage Factor	X	Release Duration (hrs)	X	Mixing Factor	X	= Dose (mR)
Liver							
Whole Body	1.0				.0091		
Thyroid							

Date: _____

APPENDIX EP-318-5 PHILADELPHIA BELMON WATER INTAKE

		Dose Conversion Factor (mR/hr ÷ uCi/cc)	X	Concentration uCi/cc	X	Decay Factor	=
Co-60	Liver	406				1.0	
	Whole Body	959					
I-131	Liver	1591				.80	
	Whole Body	700					
	Thyroid	5.23P5					
Cs-134	Liver	2.64P4				1.0	
	Whole Body	1.01P4					
Cs-137	Liver	2.30P4				1.0	
	Whole Body	5942					

	Schuylkill River Usage Factor	X	Release Duration (hrs)	X	Mixing Factor	X	= Dose (mR)
Liver							
Whole Body	1.0				.0112		
Thyroid							

Date: _____

11/22/83

PHILADELPHIA ELECTRIC COMPANY
LIMERICK GENERATING STATION
EMERGENCY PLAN IMPLEMENTING PROCEDURE

EP-319 FISH INGESTION PATHWAY DOSE CALCULATION

1.0 PURPOSE

The purpose of this procedure is to provide the calculation method for estimates of the maximum population exposure due to the ingestion of fish from the Schuylkill River.

2.0 RESPONSIBILITIES

None

3.0 APPENDICES

3.1 EP-319-1 Maximum Dose From Fish Ingestion

4.0 PREREQUISITES

None

5.0 SPECIAL EQUIPMENT

None

6.0 SYMPTOMS

6.1 An actual or potential liquid release of radioactive material into the Schuylkill River.

7.0 ACTION LEVEL

7.1 This procedure shall be implemented when the criterion of section 6.0 is met.

8.0 PRECAUTIONS

None

9.0 PROCEDURE

9.1 The following assumptions were utilized in this calculation:

9.1.1 The Dose Conversion Factor is based on the most limiting group (adult, teen, child, infant) using dose factors and consumption rates in Reg. Guide 1.109.

Adult	21 kg/yr
Teen	16 kg/yr
Child	6.9 kg/yr
Infant	0 kg/yr

9.1.2 The Decay Factor is based on the decay of the isotope over 24 hours (time to reach the population per Reg. Guide 1.109.

9.1.3 The total dose commitment is the dose which an individual would receive after eating fish exposed by the highest concentration of diluted effluent for the duration of the release.

9.2 Obtain grab sample results on the concentration of Co-60, I-131, Cs-134, Cs-137 and P-32 released, from the Chemistry Sampling and Analysis Team Leader.

9.3 On Appendix EP-319-1, enter the concentration of P-32, Co-60, I-131, Cs-134 and Cs-137 in uCi/cc released and the release duration in hours.

If the sample was taken prior to entering the Cooling Tower Blowdown Line, a diluted concentration must be determined by the following method:

$$\text{Concentration Released } \left(\frac{\text{uCi}}{\text{ci}}\right) = \frac{\text{concentration}}{\left(\frac{\text{uci}}{\text{cc}}\right)} \times \frac{\text{Release rate to Blowdown Line}}{\text{Blowdown line flow rate}}$$

9.4 Perform the calculation on Appendix EP-319-1 to estimate the maximum dose in millirem for the liver, whole body and thyroid for the fish ingestion pathway.

9.5 Report results to the Dose Assessment Team Leader.

10.0 REFERENCES

10.1 EROL 5.2.4.1 Liquid Pathways

10.2 EROL Appendix 5.2A Radiological Dose Model-Liquid Effluents

10.3 Reg. Guide 1.109 Rev. 1 — Calculation of Annual Doses To Man From Routine Releases Of Reactor Effluents For The Purpose Of Evaluating Compliance With 10CFR Part 50, Appendix I

APPENDIX EP-319-1 MAXIMUM DOSE FROM FISH INGESTION

		Dose Conversion Factor $\frac{mR/hr}{uCi/cc}$	x Concentration $\frac{uCi}{cc}$	x Decay Factor	x Release Duration (hrs)	x Mixing Factor =	Dose (mR) Liver	Whole body	Thyroid
P-32	Liver	3.12P6					____		
	Whole Body	2.5P6		.95		.0357		____	
Co-60	Liver	256					____		
	Whole Body	614		1.0		.0357		____	
I-131	Liver	224					____		
	Whole Body	122		.92		.0357		____	
	Thyroid	7P4							____
Cs-134	Liver	7.19P5					____		
	Whole Body	5.79P5		1.0		.0357		____	
Cs-137	Liver	5.44P5					____		
	Whole Body	3.42P5		1.0		.0357		____	

DATE: _____ Total Dose(mr) + _____

Liver Whole Body Thyroid

COPY

PHILADELPHIA ELECTRIC COMPANY

2301 MARKET STREET

P.O. BOX 8699

PHILADELPHIA, PA. 19101

(215) 841-5001

SHIELDS L. DALTROFF
VICE PRESIDENT
ELECTRIC PRODUCTION

December 30, 1983

Re: Docket Nos. 50-352
50-353

Dr. Thomas E. Murley
Region 1
Office of Inspection & Enforcement
U.S. Nuclear Regulatory Commission
631 Park Avenue
King of Prussia, PA 19406

Mr. A. Schwencer, Chief
Licensing Branch No. 2
Division of Licensing
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Gentlemen:

Enclosed are two copies of Limerick Generating Station Emergency Plan Implementing Procedures. These procedures are submitted per regulations in 10 CFR 50, Appendix E, Section V.

The procedures being submitted are the following:

EP-101, Rev. 0	EP-260, Rev. 0
EP-102, Rev. 1	EP-272, Rev. 0
EP-103, Rev. 1	EP-273, Rev. 0
EP-104, Rev. 1	EP-275, Rev. 0
EP-105, Rev. 1	EP-276, Rev. 0
EP-106, Rev. 0	EP-277, Rev. 0
EP-231, Rev. 0	EP-278, Rev. 0
EP-232, Rev. 0	EP-279, Rev. 0
EP-233, Rev. 0	EP-280, Rev. 0
EP-234, Rev. 0	EP-281, Rev. 0
EP-235, Rev. 0	EP-282, Rev. 0
EP-236, Rev. 0	EP-284, Rev. 0
EP-237, Rev. 0	EP-287, Rev. 0
EP-238, Rev. 0	EP-291, Rev. 0
EP-240, Rev. 0	EP-292, Rev. 0
EP-241, Rev. 0	EP-294, Rev. 0
EP-242, Rev. 0	EP-306, Rev. 0

EXHIBIT B

EP-243, Rev. 0	EP-316, Rev. 0
EP-254, Rev. 0	EP-317, Rev. 0
EP-255, Rev. 0	EP-325, Rev. 0
	EP-330, Rev. 0

Pursuant to Section 2.790 of the Commission's regulations, it is hereby requested that the names and telephone numbers listed in procedures EP-102, Rev.1; EP-103, Rev.1; EP-104, Rev.1; EP-105, Rev.1; EP-106, Rev.0; EP-272, Rev.0; EP-273, Rev.0; EP-275, Rev.0; EP-276, Rev.0; EP-277, Rev.0; EP-279, Rev.0; EP-280, Rev.0; EP-282, Rev.0; EP-284, Rev.0; EP-287, Rev.0; EP-291, Rev.0; EP-292, Rev.0; EP-294, Rev.0; EP-306, Rev.0 be withheld from public disclosure. An affidavit setting forth the grounds in support of this request is attached hereto.

This filing supplements my letters of November 23, 1983 and December 12, 1983 and completes the Emergency Plan Implementing Procedures for Limerick 1 & 2.

Two copies have been sent under separate cover to the Document Control Desk.

Very truly yours,

Original signed by
S. L. DALTROFF

KWS:mlh

Enclosure

cc: Document Control Desk
U.S. Nuclear Regulatory Commission
Washington, DC 20555

Site Inspector - Limerick Generating Station

See Attached Service List

Judge Lawrence Brenner	(w/enclosure)
Judge Peter A. Morris	(w/o enclosure)
Judge Richard F. Cole	(w/o enclosure)
Troy B. Conner, Jr., Esq.	(w/enclosure)
Ann P. Hodgdon, Esq.	(w/enclosure)
Mr. Frank R. Romano	(w/o enclosure)
Mr. Robert L. Anthony	(w/enclosure)
Mr. Marvin I. Lewis	(w/enclosure)
Ms. Phyllis Zitzer	(w/enclosure)
Charles W. Elliott, Esq.	(w/o enclosure)
Zori G. Ferkin, Esq.	(w/enclosure)
Mr. Thomas Gerusky	(w/o enclosure)
Director, Penna. Emergency Management Agency	(w/o enclosure)
Mr. Steven P. Hershey	(w/enclosure)
Angus Love, Esq.	(w/enclosure)
Mr. Joseph H. White, III	(w/enclosure)
David Wersan, Esq.	(w/o enclosure)
Robert J. Sugarman, Esq.	(w/o enclosure)
Martha W. Bush, Esq.	(w/enclosure)
Spence W. Perry, Esq.	(w/o enclosure)
Jay M. Gutierrez, Esq.	(w/ enclosure)
Atomic Safety & Licensing Appeal Board	(w/o enclosure)
Atomic Safety & Licensing Board Panel	(w/o enclosure)
Docket & Service Section	(w/enclosure)

COMMONWEALTH OF PENNSYLVANIA :

: ss.

COUNTY OF PHILADELPHIA :

S. L. Daltroff, being first duly sworn, deposes and states as follows:

1. He is Vice President of Philadelphia Electric Company (hereinafter referred to as the "Company"); he is authorized to execute this Affidavit on behalf of the Company; and he has reviewed:

EP-102, Rev. 1	EP-279, Rev. 0
EP-103, Rev. 1	EP-280, Rev. 0
EP-104, Rev. 1	EP-282, Rev. 0
EP-105, Rev. 1	EP-284, Rev. 0
EP-106, Rev. 0	EP-287, Rev. 0
EP-272, Rev. 0	EP-291, Rev. 0
EP-273, Rev. 0	EP-292, Rev. 0
EP-275, Rev. 0	EP-294, Rev. 0
EP-276, Rev. 0	EP-306, Rev. 0
EP-277, Rev. 0	

(hereinafter referred to as "the Documents"), and finds the contents thereof.

2. The part of the Documents which is sought to be withheld from public disclosure is the listing of the names and home telephone numbers of employees of the Company, direct-line work telephone numbers of employees of the Company which are not listed in public telephone directories, names and home and work numbers of emergency response support personnel and organizations.

3. To the best of his knowledge, information and belief, the names and telephone numbers set forth in the Documents have been treated as confidential information and have been withheld from public disclosure by the Company.

4. The names and home telephone numbers in the Documents should be considered by the Nuclear Regulatory Commission as confidential and proprietary information and be withheld from public disclosure on the grounds that disclosure of the names and home telephone numbers of the employees of the Company and emergency support personnel could constitute an unwarranted invasion of the personal privacy of the individuals involved, disclosure of the work telephone numbers of the Company's employees and of the emergency response personnel and organizations could adversely affect the capability of prompt notification in the event of an emergency; such disclosure is not required in the public interest; and such disclosure could adversely affect the interests of the Company and its ability to effectively implement the notification requirements of the Emergency Plan Procedures.

Subscribed and sworn to
before me this 30th day
of December 1985

Notary Public

PATRICIA A. JONES
Notary Public, Phila., Phila. Co.
My Commission Expires Oct. 13, 1986

PHILADELPHIA ELECTRIC COMPANY
LIMERICK GENERATING STATION
EMERGENCY PLAN IMPLEMENTING PROCEDURE

EP-287 NEARBY PUBLIC AND INDUSTRIAL USERS OF DOWNSTREAM WATER

1.0 PURPOSE

The purpose of this procedure is to provide information to contact downstream users of the Schuylkill River.

2.0 RESPONSIBILITIES

2.1 The Communicator shall be responsible to contact the downstream users.

3.0 APPENDICES

None

4.0 PREREQUISITES

None

5.0 SPECIAL EQUIPMENT

None

6.0 SYMPTOMS

None

7.0 ACTION LEVEL

7.1 This procedure can be used when there has been a release to the Schuylkill River.

8.0 PRECAUTIONS

8.1 Contact the Pennsylvania Department of Environmental Resources [redacted] before using this procedure.

9.0 PROCEDURE

9.1 Immediate Actions

9.1.1 The Communicator shall contact the downstream users using the following list.

9.1.2 Downstream Users

9.1.2.1 Citizens Utility Home Water Co.
[redacted]

9.1.2.2 Philadelphia Electric Co.
Cromby Generating Station
[redacted]

9.1.2.3 Philadelphia Suburban Water Co.
[redacted] (Office)
after 5 pm
[redacted] (Plant)

9.1.2.4 Phoenixville Water Authority
[redacted]

9.1.2.5 National Gypsum Co.
W. Conshohocken Plant
[redacted]

9.1.2.6 Lukens Steel Co.
[redacted] Day
24 hrs.

9.1.2.7 Phoenix Steel Corp.
Phoenixville Plant
[redacted]

9.1.2.8 Synthane - Taylor Corp.
[redacted]

9.1.2.9 Nicolet Industries, Inc.
Norristown Plant
[redacted]

9.1.2.10 Keystone Water Co., (Norristown District)
[redacted]

9.1.2.11 City of Philadelphia, Queen Lane Plant

[redacted]

9.1.2.12 City of Philadelphia, Belmont Plant

[redacted]

9.1.2.13 Container Corp. of America
Philadelphia Plant, Mill Dr.

[redacted]

9.1.2.14 Connelly Container, Inc.
Philadelphia Plant

[redacted]

10.0 REFERENCES

None