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PHILADELPHIA ELECTRIC COMPANY

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PHILADELPHIA, PA. 19101

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DOCKETING & SERVICE
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- EDWARD J. CULLEN, JR.
- THOMAS H. MILLER, JR.
- IRENE A. MCKENNA
ASSISTANT COUNSEL

June 8, 1984

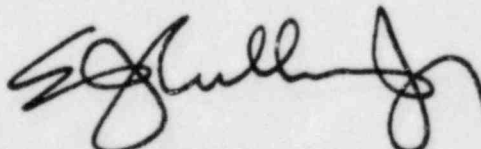
Ms. Maureen Mulligan
Limerick Ecology Action
762 Queen Street
Pottstown, PA 19464

Re: Limerick Generating Station, Units 1 and 2
Docket Nos. 50-352 & 50-353 *OL*

Dear Ms. Mulligan:

In accordance with the Board's Order of June 1, 1982, I am forwarding to you copies of correspondence and documents regarding emergency planning among Applicant, NRC Staff, the Commonwealth of Pennsylvania and other responsible governmental agencies. These documents supplement the material which was forwarded by our letter dated June 1, 1984, and provide additional correspondence covering the period May 29, 1984 through June 4, 1984.

Very truly yours,



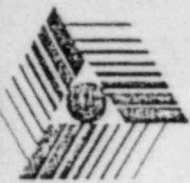
Edward J. Cullen, Jr.

EJC, jr./pkc
encs.
cc: See Attached Service List
0000q/0006q

8406120390 840608
PDR ADOCK 05000352
G PDR

DS03

cc: Judge Lawrence Brenner (w/o 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/o enclosure)
Zori G. Ferkin, Esq. (w/enclosure)
Mr. Thomas Gerusky (w/o enclosure)
Director, Pennsylvania Emergency (w/o enclosure)
Management Agency
Charles W. Elliott, Esq. (w/o enclosure)
Angus Love, Esq. (w/o enclosure)
David Wersan, Esq. (w/o enclosure)
Robert J. Sugarman, Esq. (w/o enclosure)
Martha W. Bush, Esq. (w/o enclosure)
Spence W. Perry, Esq. (w/o enclosure)
Jay M. Gutierrez, Esq. (w/o enclosure)
Atomic Safety & Licensing (w/o enclosure)
Appeal Board
Atomic Safety & Licensing (w/o enclosure)
Board Panel
Docket & Service Section (w/enclosure)
James Wiggins (w/o enclosure)
Timothy R. S. Campbell (w/o enclosure)



ENERGY CONSULTANTS

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CORPORATE OFFICE: 121 SEVENTH STREET / PITTSBURGH / PA 15222 3487 / PH. (412) 434-5200

May 29, 1984

Mr. Don Taylor, Director
Office of Training and Education
Pennsylvania Emergency Management Agency
Post Office Box 3321
Harrisburg, PA 17105

Dear Mr. Taylor:

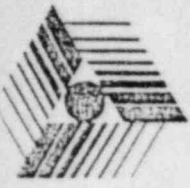
Please find enclosed a copy of Energy Consultants' training schedule for the Limerick offsite emergency preparedness effort for the month of June.

Additional classes may be added to this list. Feel free to contact Bob Patterson or me with any questions.

Sincerely,

Robert T. Bradshaw
Limerick Project Coordinator

RTB:jr
Enclosure



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May 29, 1984

Mr. Robert L. Reber, Director
Berks County Emergency Management Agency
Berks County Agriculture Center
Leesport, PA 19533

Dear Mr. Reber:

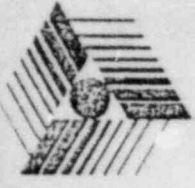
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May 29, 1984

Mr. A. Lindley Bigelow
Montgomery County OEP/EMS
100 Wilson Boulevard
Eagleville, PA 19403

Dear Mr. Bigelow:

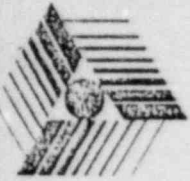
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Limerick Project Coordinator

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May 29, 1984

Mr. Timothy R. S. Campbell
Director
Chester County Department of
Emergency Services
14 East Biddle Street
West Chester, PA 19380

Dear Mr. Campbell:

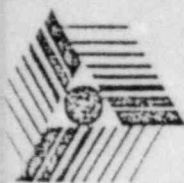
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Sincerely,

Robert T. Bradshaw
Limerick Project Coordinator

RTB:jr
Enclosure



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May 29, 1984

Dr. Donald F. Taylor, Director
Office of Training and Education
Pennsylvania Emergency Management Agency
Post Office Box 3321
Harrisburg, PA 17105

Dear Don:

This letter serves as a confirmation of the Radiological Monitoring Instructor training session you have offered to conduct for us on Thursday, May 31. The class is scheduled for 9:00 to 11:30 a.m. in the Training Room at Energy Consultants. Our offices are located in Building 3 at 2101 North Front Street. Upon arrival, please use the lobby elevator to reach our offices on the second floor.

Eighteen members of our staff have completed the eight-hour practical application course and are scheduled to attend your session on May 31. If you require any equipment or supplies beyond an overhead projector, please let me know.

I would like to take this opportunity to express our appreciation for your efforts to provide this training session. We look forward to receiving your Radiological Monitoring Instructor program.

Sincerely,

Robin Hoffman Wenger
Robin Hoffman Wenger *JR*
Training Services Coordinator

RHW: jr

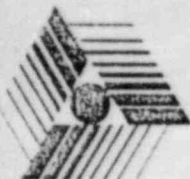
LIMERICK OFFSITE TRAINING SCHEDULE

JUNE 1984

SESSION	LOCATION	DATE	TIME	TYPE	PROJECTED TRAINEES
1	Eagleville Hospital	6/1	2:00 pm	Health Care	15
2	Red Hill	6/2	1:00 pm	EOC II	18
3	Norco FD	6/4	7:00 pm	EW II	22
4	Schwenksville Borough	6/4	7:30 pm	EOC II	8
5	Lower Frederick Township	6/4	7:00 pm	EOC II	12
6	River Crest	6/4	1:00 pm	Health Care	20
7	Phoenixville Hospital	6/5	9:00 pm	Health Care	20
8	West Vincent Township	6/5	7:00 pm	EOC II	10
9	Amity FD	6/5	7:00 pm	EW I	35
10	Phoenixville Manor	6/6	1:30 pm	Health Care	20
11	East Pikeland Township	6/6	7:00 pm	EOC II	8
12	Boyertown Borough	6/6	7:00 pm	EOC II	12
13	Royersford Borough	6/7	7:00 pm	EOC II	10
14	Lehigh County	6/7	7:00 pm	EOC II	20
15	Eagleville Hospital	6/7	TBD	Health Care	30
16	Eagleville Hospital	6/7	TBD	Health Care	30
17	Eagleville Hospital	6/7	TBD	Health Care	30
18	Eagleville Hospital	6/7	TBD	Health Care	30
19	Eagleville Hospital	6/7	TBD	Health Care	30
20	Eagleville Hospital	6/7	TBD	Health Care	30
21	West Pottsgrove Township	6/7	6:30 pm	EOC II	8
22	Perkiomen Township	6/7	7:00 pm	EOC I	6
23	Plymouth Ambulance	6/7	7:00 pm	EW II	18
24	Boyertown High School	6/11	9:15 am	Bus Drivers	50
25	Boyertown High School	6/11	12:15 pm	Bus Drivers	50
26	Norco VFD	6/11	7:00 pm	EW II	22
27	Bryn Athen Ambulance	6/11	7:00 pm	EW II	35
28	Washington Township	6/11	7:00 pm	EOC II	6
29	New Hanover	6/11	7:00 pm	EOC II	8
30	Amity FD	6/12	7:00 pm	EW II	35
31	Ridge FD	6/12	7:00 pm	EW I	25
32	Frederick Mennonite Home	6/13	TBD	Health Care	20
33	Frederick Mennonite Home	6/13	TBD	Health Care	20
34	Frederick Mennonite Home	6/13	TBD	Health Care	20
35	Frederick Mennonite Home	6/13	TBD	Health Care	20
36	Frederick Mennonite Home	6/13	TBD	Health Care	20
37	Leader Nursing Home	6/13	TBD	Health Care	20
38	Leader Nursing Home	6/13	TBD	Health Care	20
39	Leader Nursing Home	6/13	TBD	Health Care	20
40	Leader Nursing Home	6/14	TBD	Health Care	20
41	Leader Nursing Home	6/14	TBD	Health Care	20
42	Leader Nursing Home	6/14	TBD	Health Care	20
43	East Nantmeal Township	6/14	7:30 pm	EOC I	10
44	Perkiomen Township	6/14	7:00 pm	EOC II	6
45	Upper Salford FD	6/14	7:15 pm	EW I	30
46	Frederick Mennonite Home	6/15	9:30 am	Health Care	15
47	Leader Nursing Home	6/16	TBD	Health Care	20
48	Leader Nursing Home	6/16	TBD	Health Care	20
49	Leader Nursing Home	6/16	TBD	Health Care	20

LIMERICK OFFSITE TRAINING SCHEDULE - JUNE 1984 - 2

SESSION	LOCATION	DATE	TIME	TYPE	PROJECTED TRAINEES
50	Lower Frederick Ambulance	6/16	9:00 pm	EW I	18
51	Royersford FD	6/17	7:00 pm	EW I	38
52	Earl Township FD	6/17	7:00 pm	EW I	30
53	Pottstown Medical Center	6/19	7:30 am	Health Care	55
54	Pottstown Medical Center	6/19	9:00 am	Health Care	55
55	Pottstown Medical Center	6/19	10:30 am	Health Care	55
56	Pottstown Medical Center	6/19	1:00 pm	Health Care	55
57	Pottstown Medical Center	6/19	2:30 pm	Health Care	55
58	Pottstown Medical Center	6/19	4:00 pm	Health Care	55
59	Pottstown Medical Center	6/19	7:00 pm	Health Care	55
60	Pottstown Medical Center	6/19	8:30 pm	Health Care	55
61	Pottstown Medical Center	6/19	10:00 pm	Health Care	55
62	Ridge FD	6/19	7:00 pm	EW II	25
63	Spring City Borough	6/20	7:00 pm	EOC I	12
64	Lower Frederick Ambulance	6/23	9:00 am	EW II	18
65	Earl Township FD	6/25	7:00 pm	EW II	30
66	Pottstown Medical Center	6/26	7:30 am	Health Care	55
67	Pottstown Medical Center	6/26	9:00 am	Health Care	55
68	Pottstown Medical Center	6/26	10:30 am	Health Care	55
69	Pottstown Medical Center	6/26	1:00 pm	Health Care	55
70	Pottstown Medical Center	6/26	2:30 pm	Health Care	55
71	Pottstown Medical Center	6/26	4:00 pm	Health Care	55
72	Pottstown Medical Center	6/26	7:00 pm	Health Care	55
73	Pottstown Medical Center	6/26	8:30 pm	Health Care	55
74	Pottstown Medical Center	6/26	10:00 pm	Health Care	55
75	Spring City Borough	6/27	7:00 pm	EOC II	12
75					2,187



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May 30, 1984

Helen C. Kelly, R.N.
Recovery Room
Phoenixville Hospital
140 Nutt Road
Phoenixville, PA 19460

Dear Mrs. Kelly:

In response to your request following our recent orientation program at the Phoenixville Hospital, enclosed please find a copy of the plume exposure pathway EPZ map for Limerick. Please note that while the area highlighted in white constitutes the official emergency planning zone, the circle indicating the ten-mile radius is slightly undersized, due to a mapping error.

In response to your questions, the designated host school for the Perkiomen Valley School District is the North Penn High School in Lansdale. Detailed information on school emergency plans will be provided by the districts beginning with the 1984-85 school year.

It has been a pleasure to be of assistance to you.

Sincerely,

John F. Long, Jr.

JFL:jr
Enclosure

STANDARD OPERATING PROCEDURE
CENTRAL RESOURCE RECEIVING POINT MANAGER

I. PURPOSE

The purpose of this procedure is to support Chester County's response to an incident at the Limerick Nuclear Generating Station by centrally receiving and distributing incoming supplies and equipment.

II. REFERENCES

- A. Annex A, Chester County Limerick RERP
- B. Annex I, Chester County Limerick RERP

III. RESPONSIBILITIES

- A. The Central Resource Receiving Point Manager shall be responsible for:
 - 1. Acknowledging receipt of notification and making a written record of the information received, including date and time.
 - 2. Assuring necessary preparation of the Central Resource Receiving Point facility.
 - 3. Assigning and coordinating required staff for the effective operation of the Central Resource Receiving Point.
 - 4. Maintaining accurate records of all supplies and equipment received and distributed.
 - 5. Maintaining regular communications with the Chester County EOC Operations Group.

6. After the Central Resource Receiving Point is closed, taking necessary steps to prepare the facility for return to its owner.

IV. OPERATIONAL PROCEDURES

A. UNUSUAL EVENT

No action necessary.

B. ALERT

No action necessary.

C. SITE EMERGENCY

- _____ 1. Initial notification will be received from the Chester County
(time) DES.
- _____ 2. The Communications Center will notify the Central Resource
Receiving Point staff, placing them on standby status.
- _____ 3. Review procedures for General Emergency.
- _____ 4. Maintain Site Emergency status until reduction, escalation or
termination of incident.

D. GENERAL EMERGENCY

- _____ 1. Initial notification will be received from the Chester County
DES.
- _____ 2. The Communications Center will notify the Central Resource
Receiving Point staff, advising them of the situation and
dispatching them to the Central Resource Receiving Point.
- _____ 3. Inventory and prepare necessary record forms.

- _____ 4. Coordinate preparation of Receiving Point facility to receive equipment and supplies.
- _____ 5. Assign staff to the following responsibilities:
 - a. Traffic Control
 - b. Communications
 - c. Receiving
 - d. Recordkeeping
 - e. Distribution
- _____ 6. Notify the Chester County Operations Group when the Central Resource Receiving Point is activated.
- _____ 7. Maintain readiness.
- _____ 8. As supplies and equipment arrive at the Central Resource Receiving Point:
 - a. Arrange appropriate storage location.
 - b. Inventory and log.
 - c. Determine distribution.
 - d. Arrange distribution procedure.
 - e. Log out all items.
- _____ 9. Report activities regularly to the Chester County DES EUC Operations Group.

- _____ 10. Maintain General Emergency status until notified by DES to terminate operations.

- _____ 11. Following closing of the Central Resource Receiving Point, prepare a final report to include:
 - a. Names and addresses of all staff.
 - b. Inventory of all supplies and equipment.
 - c. Receiving and Distribution logs.
 - d. Hand receipts.
 - e. Message logs.

Forward this information to the Chester County DES.

IMPLEMENTING PROCEDURE

FIELD OPERATIONS GROUP

I. PURPOSE

The purpose of this procedure is to support Chester County's response to an incident at the Limerick Generating Station, assuring the provision of expanded telecommunications within the plume exposure pathway emergency planning zone and providing for backup telecommunications in the event of a system failure.

II. REFERENCES

- A. Annex B, Chester County Limerick RERP.
- B. Annex C, Chester County Limerick RERP.

III. RESPONSIBILITIES

- A. The Field Operations Group is responsible for providing secondary and backup field communications and operational coordination in the event a protective action is ordered in response to a condition at the Limerick Generating Station.
- B. The Field Operations group is responsible for providing telecommunications and other services as necessary to the Pennhurst State Facility.

IV. OPERATIONAL PROCEDURES

A. UNUSUAL EVENT

No action necessary.

B. ALERT

The Field Operations Group will be notified and may be requested to report to the EOC.

C. SITE AND GENERAL EMERGENCY

1. The Field Operations Group will be notified to report to the Chester County DES.
2. The mobile communications unit will be prepared for service.
3. As directed, the Field Operations Group will report with the unit to the Pennhurst State Facility.
4. Test all telecommunications links.
5. Assist the Chester County Communications Center as required.

6. Provide telecommunications for the Pennhurst Facility as required.

IMPLEMENTING PROCEDURE

MUNICIPAL LIAISON OFFICER
(DAMAGE ASSESSMENT)

I. PURPOSE

The purpose of this procedure is to support Chester County's response to an incident at the Limerick Generating Station, providing for a liaison with affected municipalities and for the provision of status reports regarding the municipal response.

II. REFERENCE

- A. Annex A, Chester County Limerick RERP
- B. Municipal Plans for Chester County Municipalities

III. RESPONSIBILITIES

- A. Municipal emergency management coordinators are responsible for implementing the response of the municipality to an incident at Limerick insofar as municipal resources allow.
- B. The Municipal Liaison Officer is responsible for:
 - 1. Review of, and familiarity with, municipal RERP's.
 - 2. Establishing and maintaining communications with municipal emergency management coordinators at the time of an incident.
 - 3. Development of status reports regarding the municipal response to an incident at Limerick.
 - 4. Coordination of Chester County's response to municipal unmet needs with the DES Director and appropriate County EOC staff.

IV. OPERATIONAL PROCEDURES

A. UNUSUAL EVENT

No action necessary.

B. ALERT

- _____ 1. Report to the Chester County ^{ECC} EOC if requested.
(time completed)
- _____ 2. Notify and brief the relief Municipal Liaison Officer.
- _____ 3. ^{Verify notification} ~~Notify~~ and brief risk municipal emergency management coordinators, directing them to notify key staff, activate their EOC, and implement the municipal RERP as appropriate for ALERT (reference Attachment A).
- _____ 4. Review procedures for SITE EMERGENCY.
- _____ 5. Maintain ALERT status until incident escalation or reduction or termination.

NOTES:

C. SITE EMERGENCY

- _____ 1. Report to the Chester County EOC.
(time completed)

- _____ 2. Notify the relief Municipal Liaison Officer, placing on stand y status, and prepare for extended (12-hour shift) operations (reference Attachment A).

- _____ 3. Verify notification of municipal emergency management coordinators, ensuring that they are activating their EUC's and are implementing their RERP as appropriate for SITE EMERGENCY (reference Attachment C).

- _____ 4. Respond to municipal unmet needs as reported by municipal EMA staff. (NOTE: Municipal EOC staff may contact their County EOC counterparts directly via telephone. Coordinate with other EOC Officers in order to assess their response to municipal unmet needs.)

- _____ 5. Prepare status reports, on an hourly basis or as requested, detailing municipal response information, unmet needs, and steps being taken to respond to unmet needs. Forward such reports to the DES Director.

- _____ 6. Review procedures for GENERAL EMERGENCY.

- _____ 7. Maintain SITE EMERGENCY status until incident escalation or reduction or termination.

NOTES:

D. GENERAL EMERGENCY

- _____ 1. Report to the Chester County EOC.
(time
completed)
- _____ 2. Notify the relief Municipal Liaison, placing on standby status,
and implement extended (12-hour shift) operations (reference
Attachment A).
- _____ 3. Notify risk municipal emergency management coordinators of the
GENERAL EMERGENCY.
- _____ 4. Update records of municipal unmet needs and coordinate the
response with appropriate County EOC staff.
- _____ 5. Update status reports regarding the municipal response.
- _____ 6. If a protective action (Evacuation or Sheltering) is ordered or
recommended, convey that information to municipal emergency
management coordinators, directing that they employ the
appropriate procedures in their RERP (reference Attachment C).
- _____ 7. Monitor the progress of the municipal implementation of
protective actions, coordinating the response to unmet needs and
preparing appropriate status reports.
- _____ 8. In the event of a general evacuation, confirm the location of
alternate municipal EOC's with the risk municipal emergency
management coordinators.
- _____ 9. Maintain GENERAL EMERGENCY status until incident reduction or
termination.

NOTES:

ATTACHMENTS

Attachment A: Risk Municipal Emergency Management Coordinators

Attachment B: Municipal EOC's

Attachment C: Municipal Relocation EOC's

IMPLEMENTING PROCEDURES
MUNICIPAL LIAISON OFFICER
(DAMAGE ASSESSMENT)

ATTACHMENT A

RISK MUNICIPAL EMERGENCY MANAGEMENT COORDINATORS

TBC

IMPLEMENTING PROCEDURE
MUNICIPAL LIAISON OFFICER
(DAMAGE ASSESSMENT)

ATTACHMENT B

MUNICIPAL EOC's

TBD

IMPLEMENTING PROCEDURE
MUNICIPAL LIAISON OFFICER
(DAMAGE ASSESSMENT)

ATTACHMENT C

MUNICIPAL RELOCATION EOC's

TBD

CHESTER COUNTY DEPARTMENT OF EMERGENCY SERVICES

STANDARD OPERATING PROCEDURE

Monitoring/Decontamination Stations

I. PURPOSE

The purpose of this procedure is to support Chester County's response to an incident at the Limerick Generating Station, assuring effective initiation and operations of monitoring/decontamination stations.

II. REFERENCES

Annex M, Chester County Limerick RERP.

III. RESPONSIBILITIES

- A. Chester County DES is responsible for notification of Monitoring/Decontamination personnel.
- B. The Chester County Radiological Officer is responsible for verification of notification, team assignments, and coordination of radiological monitoring and decontamination activities.
- C. The Chester County Hazardous Materials group will support the Radiological Group.
- D. Monitoring/Decontamination team leaders will be responsible for coordinating the operations of specific monitoring/decontamination stations and for maintaining communications with the County Radiological Officers at the EOC.
- E. Radiological monitoring and decontamination team members are responsible for conducting monitoring and decontamination operations according to Annex M of the Chester County Limerick RERP and this procedure.

IV. OPERATIONS PROCEDURES

A. UNUSUAL EVENT

No action necessary.

B. ALERT

- 1. Radiological monitoring and decontamination teams may be notified and placed on standby or mobilized.
- 2. If placed on standby, remain available for immediate notification.
- 3. If mobilized, report to assigned station.

C. SITE EMERGENCY

1. Radiological monitoring and decontamination teams will be mobilized to specific locations.
2. Inventory and check all survey meters.
3. Issue team members dosimetry.

D. GENERAL EMERGENCY

1. Radiological monitoring and decontamination teams will be activated at specific locations, which may be Mass Care Centers or emergency worker monitoring/decontamination points, or other locations as necessary.
2. Initiate monitoring decontamination activities according to procedures in Attachment B.

ATTACHMENTS

Attachment A	Chester County Monitoring/Decontamination Points
Attachment B	Decontamination Monitoring Procedures
Attachment C	Hospitals Capable of Radiation Treatment
Attachment D	Inventory Procedures
Attachment E	Forms

ATTACHMENT A
MONITORING DECONTAMINATION POINTS

ATTACHMENT B

DECONTAMINATION MONITORING PROCEDURES

I. GENERAL INFORMATION AND ORGANIZATION

A. Decontamination Monitoring of the Public

In the event of a fixed nuclear facility incident, the public and emergency workers may have to be individually monitored to ascertain whether or not the individual is contaminated with a radioactive substance. If a person is found to be contaminated, then he/she must be decontaminated. Teams will be advised whether or not decontamination monitoring is required. Decontamination monitoring will be performed upon request regardless of whether it is required.

B. Organization at Mass Care Centers

1. Mass care centers for evacuees will serve as points where decontamination monitoring and decontamination procedures will be conducted. When decontamination monitoring is required, evacuees upon arrival at the mass care center will be monitored and, if necessary, decontaminated, after which they will be admitted to the "general living" portion of the mass care center. Decontamination monitoring teams will conduct the monitoring, carry out decontamination procedures, and complete associated records.
2. Decontamination monitoring teams take direction from the county radiological officer and coordinate with the mass care center manager. Decontamination monitoring of evacuees should be completed as soon as possible; decontamination monitoring of personal belongings (i.e., clothing, personal articles, vehicles) can be accomplished after the evacuees have been processed.
3. Decontamination monitoring teams will organize their areas and traffic flow patterns so that contaminated persons and those to be monitored will not mix with the contamination-free individuals already admitted to the general living section of the mass care center. For example, persons will be sent to the decontamination area (showers) by a route that will not place them in contact with contamination-free areas. Showers used for decontamination will not be available for general use until they are decontaminated.

C. Decontamination Monitoring Services for Persons Who Are Not Housed at Mass Care Centers.

1. Persons who do not intend to stay at a mass care center, but who wish to be monitored will be extended these services at mass care/ decontamination centers. The decontamination monitoring

procedures and record keeping are identical for people who stay or do not stay at mass care centers.

D. Decontamination Monitoring Station for Emergency Workers

1. Upon completion of his/her mission, or as directed by supervisors, each emergency worker may be ordered to report to a decontamination monitoring station to be monitored for radiological contamination, and, if necessary, decontaminated.
2. Since the mass care/ decontamination centers for the public are generally located 20 or more miles from the nuclear facilities, special "decontamination monitoring stations for emergency workers" are established closer to the plume exposure pathway EPZ.
3. Each mass care center and decontamination monitoring station is to extend its service to any requesting emergency worker of any organization.

E. Equipment and Personnel Requirements

1. The instrument used for decontamination monitoring is the CD V-700 Geiger-Mueller Survey Meter (range: approximately 0.0 to 50 mR/h).
2. A sufficient number of CD V-700 survey meters are available for each mass care center to allow one meter for each 250 mass care spaces; decontamination stations have available one CD V-700 for each 50 emergency workers.
3. Personnel requirements are one trained monitor and one recorder (assistant to the monitor) for each survey meter as a minimum. Each decontamination monitor and recorder is supplied with dosimetry (CD V-742 and TLD) and KI.
4. Inventory, maintenance, and property accountability with regard to dosimetry, survey meters, and KI are described in this Attachment.

F. Decontamination Monitoring Record Keeping

Decontamination monitoring personnel will be responsible for completing a "Decontamination Monitoring Report Form" for each individual with a reading of 0.05 mR/h (milliroentgens per hour) or more above background, which is the action level set indicating that decontamination of the individual is necessary. The form will be completed, signed by the monitor at each of the steps [(1) initial monitoring, (2) after first decontamination, (3) after second decontamination, (4) medical referral.] Two copies of the form will be prepared. One copy will be given to the individual when decontamination is completed or the individual is sent to a medical facility. The original will be retained by the county in a historical file.

G. Progress Reports on Decontamination Monitoring

Decontamination team chiefs must verbally report at two hour intervals to their County Radiological Officers on the results of monitoring. The report shall include the following cumulative data: number of persons monitored; number contaminated; number decontaminated; number referred to a medical facility (for radiation decontamination/treatment); the highest reading (above 0.05 mR/h) on any particular individual; and any unusual or particularly notable findings.

II. PROCEDURES FOR DECONTAMINATION MONITORING TEAMS

A. Decontamination Monitoring Procedures

Monitors performing decontamination monitoring of people should follow these procedures:

1. Select a reception location for conducting the monitoring operation. Precautions must be taken to prevent contamination of the area.
2. Use the CD V-700. Attach the headphone. This allows the monitor to observe the position of the probe and better control it while monitoring. The headphone responds more quickly to changes in radiation level than the meter.
3. Check the operability of the CD V-700.
4. Place the probe in a light plastic bag or cover of lightweight material to prevent contamination. This is desirable but not mandatory.
5. Periodically determine the background radiation level of the location where the monitoring is to take place. If the meter indication is above background radiation with the probe shield closed, find a better location that will bring the meter indication as low as possible.
6. Open the shield on the CD V-700 probe and put on the headphone.
7. Place the probe two inches from the head, being careful not to touch the person.
8. Move the probe downward on one side of the neck, the collar, the shoulder, arm, wrist, hand, underarm, armpit, side of body, side of leg, around the cuff and shoe, including the bottom of the shoe. Then monitor the inside of the leg from the cuff to the groin and continue the procedure on the other side of the body (reference Illustration 1).
9. Monitor the front and back of the body.

10. Record the information on the Decontamination Monitoring Report Form.
 11. Assure that individuals found to be contaminated are decontaminated.*
 12. Monitor the individual after decontamination to determine that the contamination has been removed. Repeat decontamination procedures if contamination still remains.
- B. Thyroid Gland Screening Check for Emergency Workers
1. In addition to the steps outlined in II.A. immediately above, emergency workers are to be screened for thyroid gland uptake of radioiodine.
 2. The thyroid uptake screening procedure follows:
 - a. The CD V-700 is used as the screening detector for thyroid uptake of radioiodine.

CAUTION

The individual being checked must be free of any contamination before this procedure is implemented.

*A person is considered contaminated if there is a reading of 0.05 mR/n or more above background. Do not confuse background radiation with your readings; contamination would be apparent by a sustained increase on the visual meter reading (selector switch on X 1 range), and also by a marked increase in the audible indication from the headphone.

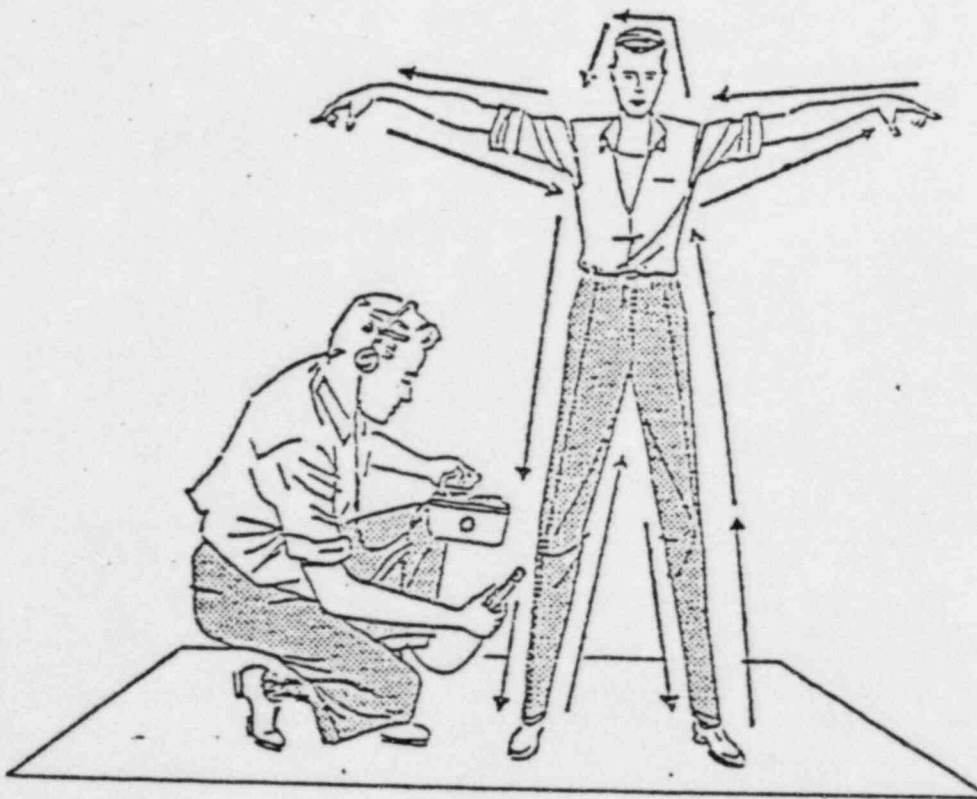


Illustration 1 - Decontamination Monitoring

b. Monitors performing the thyroid screening uptake procedure should follow these steps:

- (1) Put the probe with the shield closed across the front of the neck just below the larynx (Adam's Apple).
- (2) If the reading is greater than or equal to 0.1 mR/hr, refer the individual to the appropriate medical facility for evaluation.
- (3) If the reading is less than 0.1 mR/hr, no further action is necessary.
- (4) Record the data on the Dosimetry-KI Report Form and sign in the appropriate place.

C. Decontamination of People

1. Contaminated persons should wash with soap and warm water; i.e., a thorough shower should be sufficient. Emphasis should be placed on any specific spots found to be contaminated in the monitoring process. Also, special attention should be given to the hair, hands and fingernails.
2. After thorough cleansing the individual should be monitored again. If some contamination still remains, the individual should shower again and use a mild abrasive soap. If monitoring after the second thorough cleansing indicates that the contamination is still present, the individual should be sent to the nearest medical facility capable of treating contaminated persons. See Attachment C for a list of such facilities.
3. Care should be taken that persons who are decontaminated do not become recontaminated by dressing in contaminated clothing (the clothing they were wearing or possibly other clothing brought by them.) If the individual does not have contamination free clothing, clothing should be issued the individual until such time as their clothing can be decontaminated.

D. Decontamination Procedures for Wounds

Persons with contaminated wounds should be referred to an appropriate medical facility for radiation decontamination and treatment.

E. Clothing Decontamination Procedures

1. Articles which are machine washable should be laundered with a conventional detergent, line dried in a contamination free area or machine dried, and retained until they can be monitored. Water repellent items may be scrubbed with water and detergent, and retained until monitored.
2. The County DES is responsible for arranging for a laundry facility dedicated to washing of contaminated clothing.

F. Decontamination Procedures for Supplies, Instruments and Equipment

1. The item in question should be monitored first to determine the extent and area of contamination by thoroughly going over the object with the CD V-700 probe (with open shield) about two inches from the surface. Decontamination of these articles is generally accomplished by wiping or washing to the extent necessary to remove the radiocontaminants.
2. The County DES is responsible for arranging for radiation monitoring of vehicles and for decontamination. At mass care centers, monitoring teams will initially direct their efforts to the evacuees as described in (a) and (b) above. When time permits, the monitoring teams can monitor the vehicles of the evacuees where they are parked. Generally, external monitoring of vehicles will be sufficient; however, inside monitoring will also be accomplished for those vehicles found to be externally contaminated or used by persons found to be contaminated. Suitable car washing arrangements can be made for external decontamination depending upon the number of vehicles contaminated and amount of radiocontamination. Vehicles with contamination in the interiors will be impounded and the county radiological officer notified.

G. Disposal of Contaminated Wastes

1. As described above, clothing and similar materials as well as miscellaneous equipment and vehicles can be decontaminated. Where cleaning materials and other items cannot be successfully decontaminated, special handling is necessary.
2. Contaminated waste materials should be packaged in a plastic bag, tied securely at the top, and placed in a metal container with a snug fitting lid (garbage can) until it is laundered. If any material cannot be decontaminated by laundering, place it in the same type of plastic bag and container and store in a locked room that is not used for any other purpose until such time as the contaminated waste is disposed of by FRMAP personnel. Accumulation of contaminated waste materials and the need for disposal should be reported through the emergency management system.

ATTACHMENT C

HOSPITALS EQUIPPED TO RECEIVE RADIOLOGICAL PATIENTS

<u>FACILITY</u>	<u>NUMBER OF BEDS</u>
1. University of Pennsylvania Hospital 3400 Spruce Street Philadelphia, PA 19104 (215) 662-3000 - Radiology (215) 662-4000 - 2203 Main Number Dr. Sheldon Jacobson - Emergency Room Chief. The University of Pennsylvania Hospital is the Definitive Care Center for Radiation contamination in the Delaware Valley. This hospital has been designated as the referral center for the entire Delaware Valley region. Local hospitals are capable of providing stabilization, monitoring and decontamination, as necessary, and are to refer severe cases to the University of Pennsylvania Hospital.	186
2. Southern Chester County Medical Center LR 131 West Grove, PA 19390 (215) 869-1000	53
3. Chester County Hospital 701 E. Marshal Street West Chester, PA 19380 (215) 431-5000	290
4. Paoli Memorial Hospital Lancaster Pike Paoli, PA 19301 (215) 648-1000	188
5. Brandywine Hospital 201 Reeceville Road Coatesville, PA 19320 (215) 383-9068--8049	208

All other hospitals in the state with this capability are identified in the Commonwealth's Disaster Operations Plan, Annex E, and these resources could be used if the primary and immediate support hospitals identified here are not sufficient.

ATTACHMENT D

DOSIMETRY AND POTASSIUM IODIDE (KI) INFORMATION

I. GENERAL INFORMATION

- A. Each emergency worker assigned tasks within the plume exposure pathway EPZ will be equipped with three dosimeters, a Dosimetry-KI Report Form, and a 14 day supply of potassium (KI). Two of the dosimeters are self-reading; they are the CD V-730 or a DCA-622, both of which measure from 0 to 20 R, and the CD V-742 which measures from 0 to 200 R. The third dosimeter is a thermoluminescent dosimeter (TLD) which is a card type device that is read by the TLD service contractor.
- B. Decontamination monitoring team members are issued a CD V-742, a TLD, KI and a Dosimetry-KI Report Form.
- C. Dosimeter chargers (CD V-750) which are used to "zero" or charge the self-reading dosimeters are located with, or within easy access to, each emergency organizational unit.
- D. The CD V-740 (0-100R) self-reading dosimeter is considered an adequate substitute for either the CD V-730 or CD V-742.

II. DISTRIBUTION OF DOSIMETRY-POTASSIUM IODIDE AND RELATED PROCEDURES

A. Distribution

The TLDs, CD V-730s or DCA-622s, CD V-742s, Dosimetry-KI Report Form, potassium iodide and appropriate numbers of CD V-750s in support of response to fixed nuclear facility incidents are available from the County DES. The county will dispatch a county vehicle to distribute the appropriate number of units of dosimetry-KI, dosimeter chargers and survey meters to the municipalities in the risk area when the classification of ALERT is declared. For this purpose a "Dosimetry, KI, Survey Meter Distribution List" is included as Appendix 3. This county list identifies by name and address each organization to be distributed these resources and specifies the number of dosimeters, units of KI, dosimeter chargers, and survey meters to be distributed to each agency. The using organizations will from the municipalities and distribute to their emergency workers dosimetry and KI upon the declaration of SITE EMERGENCY. (Note: Decontamination monitoring teams at decontamination centers and stations are not activated until SITE EMERGENCY, upon which distribution is made to the team by the County DES.)

B. Property Control

Property accountability must be maintained in the distribution process. The "Receipt Form for Dosimetry-Survey Meters-KI" (see Attachment E) is designed for transferral of quantities of equipment from agency to agency, such as from the county to municipalities and decontamination teams, and from municipalities to emergency response organizations (fire, police, ambulance). "Acknowledgment of Receipt by Emergency Workers for Dosimetry-KI and Survey Meters" (see Attachment F) is designed to expedite transferral of the equipment-KI to individual users. Municipal EOCs, fire companies, police departments, ambulance services and decontamination monitoring teams should use this form (Attachment F) to maintain accountability when distributing the equipment-KI to their individual emergency workers.

Upon termination of an incident, all equipment and unused KI must be returned to the county DES.

C. Control TLD's

1. In the event of an incident, the County DES will retain the designated "Control TLDs." Control TLDs are equal in number to about 5% of the total amount allotted for distribution. Each "control TLD" is so labeled and the serial numbers are not in the same sequential batch as the TLDs meant for distribution to emergency workers. As coordinated by PEMA, the control TLDs will be forwarded to the TLD service contractor. The County DES will complete the "Control TLDs Form" (reference Attachment B) and forward it with the control TLDs.
2. The purpose of "Control TLDs" is to allow measurement of a "baseline" of radiation (background radiation) that the TLDs had been exposed to at the time the county distributed TLDs in reaction to the incident. The measurement of the accumulated background radiation as measured by the control TLDs will be subtracted from the reading obtained from each emergency worker in the county. This procedure can be characterized as a "mathematical zeroing" of the TLD. (The CD V-730s DCA-622s and CD V-742s will be zeroed by the user organizations as they are put into use.)
3. At the time of the incident the County DES will ensure that the control TLDs are not exposed to radiation other than background radiation. Specifically, since the TLDs are stored outside the plume exposure pathway EPZ, the County DES will ensure that the control TLDs are not moved inside the EPZ.

D. County Distribution Time Requirements

The county EMA plans to make its entire dosimetry-KI survey meter distribution to using agencies/organizations within two hours.

III. POTASSIUM IODIDE (KI)

A. Background Information

1. Iodine accumulates in the thyroid gland which is located at the front base of the neck just below the larynx (Adam's apple). Radioactive iodine is no different, i.e., it will accumulate in the thyroid gland in high concentration. Taking KI will have the effect of saturating the thyroid gland with iodine so that radioiodine does not lodge there in a large quantity. Hence, KI lessens the risk to the thyroid gland; otherwise, it provides no protection against radiation.
2. The Pennsylvania Department of Health is responsible for developing policies relating to use of KI during fixed nuclear incidents. The department has procured KI tablets for emergency workers and KI in liquid form for staff and patients of risk hospitals. Thyro-Block (product of Carter-Wallace Inc.) is the brand name of the KI tablets procured by the department. A unit of Thyro-Block consists of 14 tablets of 130 milligrams in size; the dose is one tablet per day. The liquid preparation (manufactured by Roxanne, Inc.) dosage is six drops per day; for planning purposes the liquid KI requirements are based upon a 14 day supply per person.
3. The toxicity level of KI is very low and dangers in taking this drug are considered to be minimal. Nonetheless, individuals should not take more than the recommended dose. Although side effects to KI are unlikely because of the low dose and the short time period it will be taken, some side effects are possible. The side effects may include: skin rashes, swelling of the salivary glands, and "iodism" (metallic taste, burning mouth and throat, sore teeth and gums, cold symptoms and sometimes gastrointestinal symptoms.) A few people may have an allergic reaction with more serious symptoms. These symptoms could include elevated temperature, joint pains, swelling of the face and body, and at times, severe shortness of breath which requires immediate medical attention.
4. The effectiveness of KI as a blocking agent is greatest if administered before the time of exposure to radioiodine, but some exposure saving can be obtained by administration shortly after exposure. Information on Thyro-Block and on the liquid KI are included in Attachments C and D to this Appendix.

B. Pennsylvania Department of Health Policies on KI

1. KI in tablet form is available to emergency workers (emergency management agencies, police forces, fire companies, ambulance services, and farmers keeping livestock). Those emergency worker organizations and institutions that receive KI protection are specified in Appendix 3.

2. The Secretary of the Department of Health is charged with the decision to use KI during an incident. KI should be taken only on the advice of the Secretary of the Department of Health. The Secretary's advice will be disseminated to emergency workers through emergency management channels. Upon taking KI, the emergency worker should record this information on the Dosimetry-KI Report Form.
3. The Department of Health will provide the public with information concerning KI.

IV. DOSIMETRY READINGS, RECORD KEEPING AND PROTECTIVE ACTION OPTIONS

A. Dosimetry Reading Procedures

1. Dosimeters should be worn in the pocket of an outer garment from the time of issue until the worker is dismissed from duty or until PEMA says dosimetry is no longer necessary. In no case should the TLD be worn by more than one person since there is no way of ascertaining later how much of the dose recorded on the TLD was received by each individual if more than one person was involved.
2. For practical purposes each Roentgen registered on either of the self-reading dosimeters is to be interpreted to mean that the worker has received a corresponding number of rem, e.g., a reading of 5 R should be interpreted to mean that a 5 rem dose has been received.
3. Each emergency worker should read the self-reading dosimeters at least once each thirty minutes.
4. Two self-reading dosimeters provide redundancy. Workers should heed the higher measurement taken from the two dosimeters. It is possible for dosimeters of this type to have "electrical leakage" that will register a reading not caused by radiation. Nonetheless, workers are to "err on the side of caution" by heeding the higher reading.

B. Protective Action Guides (PAG) for Emergency Workers

1. Whole Body Exposure - The protective action guide for whole body exposure specified by the Environmental Protection Agency (EPA) and by BRP is 25 rem. Workers should use the self-reading dosimeter(s) to ensure that the 25 rem whole body PAG is not exceeded. By regularly checking the self-reading dosimeter(s), the worker can make reasonable judgments about how much radiation, if any, has been received and at what rate it is being received.
2. Emergency workers and supervisors are cautioned that the 25 rem protective action guide should not be construed as "license" to incur radiation exposure unnecessarily. Workers and supervisors should attempt to keep exposure as low as reasonably achievable.

This concept means that exposure to radiation should be kept to a minimum for all persons and that any one individual should not receive a total dose far in excess of other emergency workers if circumstances permit substitution of personnel, termination of the assignment, or other protective action.

3. Thyroid Gland Exposure - The EPA and BRP PAG for thyroid dose is 125 rem for emergency workers but with no specific upper limit for life saving activities. An upper limit is not given for thyroid exposure since in the extreme case complete thyroid loss might be acceptable for a life saved.
4. Life Saving Missions - Responsible emergency management of off-site workers dictates that exceeding the 25 rem protective action guide should not occur. However, if there should be extraordinary circumstances wherein a person's life is at stake, the 24 rem whole body dose may be exceeded in order to complete a life saving mission. The EPA and BRP specify an upper limit of 75 rem whole body dose for life saving missions, i.e., subject to special approval, conditions, and measures. Therefore, persons who volunteer for a life saving mission may exceed the 25 rem whole body limit set for emergency workers, but in no case may they exceed 75 rem.

Elected officials in authority may authorize, in advance, volunteer emergency workers to exceed the protective action guidelines (25 rem whole body exposure) to a maximum of 75 rem for a life saving mission. This advance authorization is intended to avoid delay in performing a necessary life saving mission. A wide margin of safety should be maintained to avoid risk from possible adverse long term health effects caused by radiation exposure (see paragraph C below). Decision makers (elected officials) should consider the information in paragraph C below and also ensure that the following conditions have been met:

- a. The mission is of life saving importance.
- b. Alternative solutions have been exhausted.
- c. Emergency workers should be healthy adult male volunteers, preferably over 45 years of age.
- d. The emergency workers selected should be person whose normal duties might involve such missions, i.e., policemen and firemen with suitable protective clothing and respiratory equipment.
- e. The mission is accomplished in the least amount of "stay time."
- f. The emergency workers are knowledgeable of and accept the increased risk of exceeding the 25 rem PAG.

C. Increased Risks Due to Radiation Exposure*

Information concerning the possible consequences of emergency workers' exposure to radiation during a fixed nuclear incident is organized below into three categories - (1) immediate somatic effects, (2) long term somatic effects, and (3) genetic effects. Somatic is an adjective pertaining to characteristics of or effects on the body, as distinguished from genetic characteristics or genetic effects which are manifested in offspring (descendants).

1. Representative Relationships Between a Brief One-Time Radiation Exposure and Immediate Somatic Effects

Representative Absorbed
Dose of Whole Body X or
Gamma Radiation (rads)

Nature of Effect

5-25 rem	Minimal dose detectable by chromosome analysis or other specialized analysis.
50-75 rem	Minimal acute dose readily detectable in a specific individual (e.g., one who presents himself as a possible exposure case).
75-125 rem	Minimal acute dose likely to produce vomiting in about 10% of people so exposed.
150-200 rem	Acute dose likely to produce transient disability and clear hematological changes in a majority of people so exposed.

2. Long Term Somatic Risks as a Result of a One Time Exposure to Radiation

Current knowledge about the long term health effects resulting from a one time radiation exposure below 25 rem indicates that development of health problems, such as cancer, in adults so exposed is extremely unlikely. There is no direct clinical evidence of low level radiation (in this case meaning a one time exposure below the whole body dose protective action guide of 25 rem) causing health problems years after the exposure.

3. Genetic Effects of Radiation

Radiation exposure of reproductive cells of the ovary and testis causes gene and chromosome abnormalities (mutation). Persons

*Information derived from "Basic Radiation Protection Criteria," National Council on Radiation Protection and Measurements Report Number 39, Bethesda, Maryland, March 1, 1982.

exposed to any radiation should avoid the possibility of conception during the first few months after exposure, in order to virtually eliminate any possible genetic risk.

D. Dosimetry and KI Record Keeping

1. Each emergency worker is responsible for completing a Dosimetry-KI Report Form (reference Attachment A) and for returning it, along with the dosimetry, to his organization at the termination of his services. Each emergency organization shall forward the forms and dosimetry to the County DES who in turn will deliver the TLDs and forms to PEMA. All dosimetry records will be forwarded to BRP for the purposes of record keeping, analysis, reporting and storage.
2. BRP will retain all original copies and will be the permanent record keeper of the completed Dosimetry-KI Report Forms along with BRP's explanation of each, the TLD service contractor generated information and all related material. The records of individuals will be kept confidential
3. BRP will use the Dosimetry-KI Report Form to select TLDs for immediate reading. The highest priority will be given to TLDs worn by persons whose self-reading dosimetry indicates 25 R or more, or where medical authority has requested immediate reading, or where other circumstances warrant.
4. If emergency workers turn in their TLD for reading and are later deployed in an area where dosimetry is needed, they should be issued new TLDs.

V. FARMER ACCESS TO THE PLUME EXPOSURE PATHWAY EPZ

A. Farmers as Emergency Workers

Farmers with livestock within the plume exposure pathway EPZ will be designated emergency workers if the EPZ is evacuated. The County DES will provide these farmers with dosimetry and KI and identification enabling them to stay within or exit and reenter the evacuated area to tend livestock.

B. Distribution of Dosimetry-KI and Farmers' "Pass" to the Evacuated Area

A "Contact and Dosimetry-KI Distribution Point for Farmers" will be established at Lionville Fire Department, Village Avenue, Lionville.

If an evacuation is necessary, an Emergency Broadcast System (EBS) announcement will direct farmers with livestock within the EPZ to report to this location. The County Agricultural Agent or his representative will distribute the dosimetry-KI to the farmers. A "Farmer Emergency Worker Certification" form will be completed in duplicate for each farmer. The original copy will be given to the farmer and serve as a pass for access to the evacuated area. The

duplicate will be retained by the agriculture representative as the basis for property control.

C. Limitation on Farmer Access to the Plume Exposure Pathway EPZ

The farmer's emergency worker status and authorization to be in the EPZ can be suspended if the incident becomes serious enough to warrant this action.

ATTACHMENT D

INVENTORY AND MAINTENANCE PROCEDURES

I. PURPOSE

This attachment sets forth procedures for inventory and maintenance of the dosimetry, dosimeter chargers, survey meters and potassium iodide (KI) intended for use in response to incidents at the Limerick Generating Station.

II. DEFINITIONS

For the purpose of this appendix, the following definitions are applicable:

- A. Inspection - A visual check for physical damage and missing accessories to include batteries (for the CD V-750 and CD V-700) which should be stored separately.
- B. Operational check -
 - 1. Self-reading dosimeters (CD V-730, CD V-742, or Dosimeter Corporation of America Model 622) - The dosimeter is operational if the hairline can be moved to or close to zero using a dosimeter charger.
 - 2. Dosimeter charger (CD V-750) - The charger is operational if the light source for reading dosimeters is working and the charger can move the hairline on a self-reading dosimeter to or close to zero.
 - 3. Survey meter (CD V-700) - The survey meter is operational if, after turning the selector switch to the X10 range, allowing 30 seconds for warmup, opening the shield on the probe and placing the open area of the probe as close as possible to the operational check source located on the instrument case, the meter reads between 1.5 and 2.5 mr/h.
- C. Special RERP issue - Refers to dosimeters, dosimeter chargers and survey meters that are either civil defense or commercial equipment issued to selected counties for the express purpose of response to nuclear facility incidents; this equipment is in addition to civil defense kits issued to counties as a preparedness measure for nuclear attack.
- D. Set aside - Refers only to CD V-742 dosimeters and CD V-750 dosimeter chargers originally issued as part of civil defense items have been removed from the kits (but are stored in the proximity of the kits) and "set-aside" for ready availability if a nuclear power plant incident should occur. This equipment, of course, can be placed back into the civil defense kits if nuclear attack becomes a heightened concern.

placed back into the civil defense kits if nuclear attack becomes a heightened concern.

III. INVENTORY AND MAINTENANCE PROCEDURES

- A. Annually, during the month of January, the Chester County DES will physically conduct a complete inventory of all special RERP issue or set-aside of dosimeters, dosimeter chargers, survey meters, KI and related forms (reference Attachment A). Using the form provided (Attachment A), the County DES Director will report the results of the inventory to PEMA.
- B. At least once each year, PEMA will physically conduct an inventory-inspection-operational check of the special issue and set-aside equipment and KI. All such equipment and KI will be made available at a central location for this procedure.
- C. PEMA will provide an annual KI report to the Department of Health.
- D. These procedures pertain only to the special RERP issue or set-aside of equipment and KI for response to nuclear power facility incidents and in no way changes or alters other established procedures for RADEF equipment.

IV. THERMOLUMINESCENT DOSIMETERS

Each year, based on the original issue date, PEMA will conduct an exchange of new-for-old TLDs with the County DES. When the annual replacements are received from the TLD service contractor, PEMA will exchange the TLDs on a one-for-one basis with the county.

There are no maintenance requirements for the TLDs and each has a usable life of only one year.

ATTACHMENT:

- A. Fixed Nuclear Facility Special Equipment-KI Forms Inventory Report Form

ATTACHMENT E

CONTROL TLDs FORM

When TLDs are distributed during an incident, this form should be completed by the county emergency management agency. The completed form, together with the control TLDs, should be forwarded through PEMA to BRP.

Note: If a fixed nuclear facility incident occurs, the control TLDs should not remain in, or be moved into, the plume exposure pathway EPZ.

County _____

The control TLDs accompanied by this form are serial numbered "Control _____" through "Control _____" and/or "Control _____, _____, _____, _____, _____."

The TLD stock, with which the control TLDs were co-located, was stored at:

Address _____

At the time of the incident, the control TLDs were moved to (if not moved, so indicate):

Address _____

Date and time moved: Date: _____ Time: _____

This form completed by _____

Signature: X _____

ATTACHMENT A

APPENDIX 4

FIXED NUCLEAR FACILITY SPECIAL EQUIPMENT-KI FORMS
INVENTORY REPORT FORM

CHESTER COUNTY

I, _____, certify that a physical
(name of individual conducting the inventory)
inventory of the equipment and KI issued to or set-aside by this county
specifically for response to incidents at nuclear power plants was conducted
on _____, 19__ and the results of such inventory are as follows:

<u>Equipment/KI/Forms</u>	<u>1</u> Quantity Special Issue	<u>2</u> Quantity Set-Aside	<u>3</u> Total Columns 1&2	Physical Inventory Quantity
1. CD V-730 self-reading dosimeter	_____	_____	_____	_____
2. Dosimeter Corporation of America Model 622 self-reading dosimeter (commercial equivalent of CD V-730)	_____	_____	_____	_____
3. CD V-740 self-reading dosimeter	_____	_____	_____	_____
4. CD V-742 self-reading dosimeter	_____	_____	_____	_____
5. CD V-750 dosimeter charger	_____	_____	_____	_____
6. TLD (thermoluminescent dosimeter) Serial numbers _____ through _____ and _____ through _____	_____	_____	_____	_____
7. CD V-700 survey meter	_____	_____	_____	_____
8. Bottles of KI (14 tablets)	_____	_____	_____	_____
9. Copies of "Dosimetry-KI Report Form"	_____	_____	_____	_____
10. Copies of "Decontamination Monitoring Report Form"	_____	_____	_____	_____
11. Copies of "Farmer Emergency Worker Certification	_____	_____	_____	_____

NAME OF INVENTORY CLERK: _____
(please print or type)

INVENTORY CLERK'S SIGNATURE: X _____ DATE: _____

SIGNATURE-COUNTY COORDINATOR: X _____ DATE: _____

RECEIPT FORM FOR DOSIMETRY-SURVEY METERS-KI

ISSUED BY: _____ ISSUED TO _____
ADDRESS _____ ADDRESS _____
RESPONSIBLE INDIVIDUAL _____
TELEPHONE _____

INSTRUCTIONS: During a nuclear power plant incident, use this form to maintain property and control when distributing the items listed below to municipalities and decontamination monitoring teams. This form should be used for transfer of these items in bulk form from: (1) the county emergency management agency to risk municipalities and decontamination monitoring teams; and (2) the municipalities to their local emergency response organizations (such as fire, police, and ambulance associations). NOTE: The form listed on item 11 below should be used when issuing dosimetry-KI to individuals emergency workers.

LINE NUMBER	DESCRIPTION	QUANTITY
1.	CD V-742 Self-Reading Dosimeter (0-200R)	
2.	CD V-730 Self-Reading Dosimeter (0-20R)	
3.	DCA-622 Self-Reading Dosimeter (0-20R)	
4.	CD V-750 Dosimeter Charger	
5.	TLD (Thermoluminescent Dosimeter) Serial Numbers _____ THROUGH _____	
6.	Potassium Iodide (KI) Tablets (Bottles of 14 Tablets Each)	
7.	CD V-700 Survey Meter	
8.	Dosimetry-KI Report Form	
9.	Decontamination Monitoring Report Form	
10.	Receipt Form for Dosimetry-Survey Meters-KI	
11.	Acknowledgment of Receipt by Emergency Workers for Dosimetry-KI and Survey Meters	

RECEIVED BY: _____ TITLE: _____
(print name)
SIGNATURE: X _____ DATE: _____

DECONTAMINATION MONITORING REPORT FORM

NOTE: THIS FORM WILL BE COMPLETED FOR EACH INDIVIDUAL WITH A READING OF 0.05 mR/hr OR MORE ABOVE BACKGROUND.

NAME of person monitored _____
 SOCIAL SECURITY NUMBER _____
 ADDRESS _____

FIRST Radiological Monitoring _____
 Monitor's or Recorder's Signature _____
 Mass Care Center _____
 Survey Meter Serial No. _____ DATE _____ TIME _____^{am}/_{pm}

SECOND Radiological Monitoring — to be completed after person has undergone decontamination including acquiring radiologically "clean" clothing.
 Monitor's or Recorder's Signature _____
 Mass Care Center _____
 Survey Meter Serial No. _____ DATE _____ TIME _____^{am}/_{pm}

THIRD Radiological Monitoring — to be completed after person has undergone decontamination a second time.
 Monitor's or Recorder's Signature _____
 Mass Care Center _____
 Survey Meter Serial No. _____ DATE _____ TIME _____^{am}/_{pm}

ANATOMY	FIRST MONITORING	SECOND MONITORING	THIRD MONITORING
head	mR/hr	mR/hr	mR/hr
face	mR/hr	mR/hr	mR/hr
neck	mR/hr	mR/hr	mR/hr
rt. shoulder	mR/hr	mR/hr	mR/hr
rt. arm	mR/hr	mR/hr	mR/hr
rt. hand	mR/hr	mR/hr	mR/hr
rt. side	mR/hr	mR/hr	mR/hr
rt. outside leg	mR/hr	mR/hr	mR/hr
rt. foot	mR/hr	mR/hr	mR/hr
rt. inside leg	mR/hr	mR/hr	mR/hr
groin	mR/hr	mR/hr	mR/hr
lt. inside leg	mR/hr	mR/hr	mR/hr
lt. foot	mR/hr	mR/hr	mR/hr
lt. outside leg	mR/hr	mR/hr	mR/hr
lt. side	mR/hr	mR/hr	mR/hr
lt. hand	mR/hr	mR/hr	mR/hr
lt. arm	mR/hr	mR/hr	mR/hr
lt. shoulder	mR/hr	mR/hr	mR/hr
chest	mR/hr	mR/hr	mR/hr
stomach	mR/hr	mR/hr	mR/hr
back	mR/hr	mR/hr	mR/hr
buttocks	mR/hr	mR/hr	mR/hr

Medical Referral — subject to individual sent to _____ hospital
 for decontamination and/or treatment at (TIME) _____^{am}/_{pm} on (DATE) _____
 Decontamination Team Chief's Signature _____

Form Distribution: Original to county emergency management agency;
 copy to person monitored.

FARMER EMERGENCY WORKER CERTIFICATIONS

This is to certify that (name) _____,
(address) _____,
is authorized access to the plume exposure pathway emergency planning zone
(EPZ) surrounding the _____ fixed nuclear facility for the
period extending from (date) _____ (time) _____ am/pm to (date)
(time) _____ am/pm.

This individual has been issued dosimetry and KI and is authorized
access to the evacuated area for the exclusive purpose of tending to livestock
located at:

(Farm location) _____

Identification data:

Height: _____ Hair color: _____
Weight: _____ PA Operator's License No.: _____
Social Security No.: _____

Radiological Equipment Issued:

CD V 730, Serial No.: _____
CD V 742, Serial No.: _____
TLD, Manufacturer: _____
Serial No.: _____

Individual's Signature: X _____
Agricultural Representative's
Signature: X _____

PHILADELPHIA ELECTRIC COMPANY

2301 MARKET STREET

P.O. BOX 8699

PHILADELPHIA, PA. 19101

(215) 841-4000

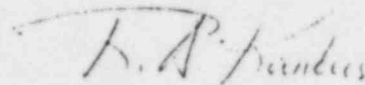
June 4, 1984

Robert Hamilton
President,
Police Chiefs' Association
of Montgomery County
Lower Moreland Township
Police Department
640 Red Lion Road
Huntington Valley, PA. 19006

Dear Bob:

Thank you for the opportunity to address your association. Since there were many questions raised regarding the Dimerick Emergency Planning Zone, enclosed for your use are two copies of the Pennsylvania Emergency Management Agency EPP map for Dimerick Generating Station.

If there are any further questions or if we may be of assistance please do not hesitate to contact me at (215) 841-5432.



R. A. Rankus
Director,
Emergency Preparedness Section
Nuclear Generation Division

RAK:mlh

Enclosures

cc: A. L. Bigelow

PHILADELPHIA ELECTRIC COMPANY

2301 MARKET STREET
P.O. BOX 8699
PHILADELPHIA, PA. 19101
(215) 841-4000

June 4, 1964

Mr. Harvey C. Chrusch
Chief of Police
Lower Pottsgrove Township
2101 W. High Street
Sanatoga, Pa. 19404

Dear Mr. Chrusch:

Thank you for the opportunity to discuss emergency planning for Dimerick. Enclosed are two copies of the Pennsylvania Emergency Management Agency Dimerick Plant Emergency Pathway Emergency Planning Zone map.

If I can be of assistance in any other manner, please contact me at (215) 841-5432.

R. A. Kankus

R. A. Kankus
Director
Emergency Preparedness Section
Nuclear Generation Division

RAK:mlh

Enclosures

cc: A. L. Biselow
R. H. Hamilton

PHILADELPHIA ELECTRIC COMPANY

2301 MARKET STREET
P.O. BOX 8699
PHILADELPHIA, PA. 19101
(215) 841-4000

June 4, 1984

Mr. Russell B. Hummel
Constable
Box 11
Gilbertsville, Pa. 19525

Dear Mr. Hummel:

Thank you for the opportunity to discuss emergency planning for Dimerick. Enclosed are two copies of the Pennsylvania Emergency Management Agency Dimerick Plume Exposure Pathway Emergency Planning Zone map.

If I can be of assistance in any other manner, please contact me at (215) 841-5432.

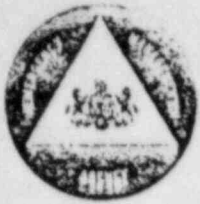
R. A. Kankus

R. A. Kankus
Director
Emergency Preparedness Section
Nuclear Generation Division

RAK:mln

Enclosures

cc: A. L. Bigelow
R. H. Hamilton



PENNSYLVANIA EMERGENCY MANAGEMENT AGENCY
P.O. BOX 3321
HARRISBURG, PENNSYLVANIA 17105



May 29, 1984

RECEIVED
JUN 1 1984
R. A. KANKUS

Roberta A. Kankus
Director
Emergency Preparedness Section
Nuclear Generation Division
Philadelphia Electric Company
2301 Market Street
P.O. Box 8699
Philadelphia, Pennsylvania 19101

Dear Bobbi:

Your letter dated May 23 has been received today.

I was under the impression that the matter discussed in your letter had already been approved. I talked with Bob Bradshaw earlier concerning the matter of dosimetry and decontamination monitoring and we agreed that ECI personnel would complete the 16-hour radiological monitoring training course required by PEMA. Following that, PEMA would train these monitors in the matter of dosimetry and decontamination monitoring and, further, would provide such personnel with a lesson plan. With that all completed, the trained monitors (ECI personnel) could then conduct dosimetry and decontamination monitoring classes.

I am aware that the ECI personnel have completed the 16-hour radiological monitoring class since we monitor a person's progress from beginning to end in this process. Further, I am aware of the May 31 class here in Harrisburg since I am scheduled to teach it.

In summation, I believe that the matter cited in your May 23 letter has already been resolved.

Sincerely,

Donald F. Taylor, Ph.D.
Director
Office of Training and Education

DFT:pmd (Tel: 717-783-8150)

cc: Timothy R. S. Campbell
A. Lindley Bigelow
Robert Reber
Robert Bradshaw

PHILADELPHIA ELECTRIC COMPANY

2301 MARKET STREET
P.O. BOX 8699
PHILADELPHIA, PA. 19101
(215) 841-4000

RECEIVED
MAY 31 1984
R. A. KANKUS

May 30, 1984

Bruce S. Aptowicz
Manager, Water Operations
City of Philadelphia
Water Department
1180 Municipal Services Building
Philadelphia, Pa. 19107

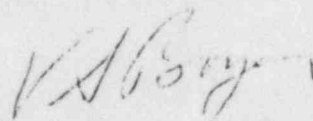
Dear Bruce:

This letter confirms that a Philadelphia Water Department and a Health Department representative will be provided space and communications access at the EMS Emergency Operations Facility located at the Plymouth Service Building.

To facilitate your participation at this facility, please provide us the names, positions and 24 hour telephone numbers of the representatives so they may be included on a notification list. We would expect your representatives to participate in one or more of the scheduled practice drills.

If you have any questions regarding the facility or the information needed, please contact Roberta A. Kankus at 215-341-5432.

Sincerely,



RAK:mlh

cc: S. L. Daltroff
E. J. Bradley
W. F. Ullrich/R. F. Logue
R. A. Kankus
S. J. Boyle
L. B. Pyrlh
DWC



TORREY PINES TECHNOLOGY

PO Box 85608
San Diego, California 92138
Telephone: (619) 455-2654

A Division of GA Technologies Inc.

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USNRC

'84 JUN 11 P1:46

OFFICE OF SAFETY
DOCKETING & SER
BRANCH

TFT:005:FDC:84
June 1, 1984

Philadelphia Electric Company
2301 Market Street S25-1
Philadelphia, PA 19101

DOCKET NUMBER
PROD. & UTIL. FAC.....

SB-352-353-06

Attention: V. S. Boyer, Sr. Vice President Nuclear Power

Gentlemen:

The enclosed status report of the Independent Design Review of Limerick Generating Station Unit No. 1 Core Spray System covers the initial period ending May 31, 1984. Per our previous discussion a copy of this report is being sent directly to the representative of the U.S. Nuclear Regulatory Commission. Please call me if you have any questions regarding the contents of this report.

Sincerely,

F. D. Carpenter
Project Manager

FDC/dn
Encl.

cc: PECO: R. A. Mulford N2-1
E. C. Kistner
J. Moskiwitz
L. B. Pyrih
G. J. Beck

Bechtel: S. J. Ployhar

USNRC: Jim Milhoan, Chief Licensing Section
Quality Assurance Branch, Office of Inspection & Enforcement
U.S. Nuclear Regulatory Commission EWS-305A
Washington, DC 20555

cc: Copy to Limerick Service List

INDEPENDENT DESIGN REVIEW
OF LIMERICK GENERATING STATION UNIT 1
CORE SPRAY SYSTEM

Bi-Monthly Status Report #1
Period Ending May 31, 1984

Introduction

This is the first of six planned bi-monthly status reports. This report includes a summary of historical information leading to the contract for Torrey Pines Technology to conduct an independent design review of Limerick's Core Spray Systems. Status Report #1 summarizes the work performed in the initial stages of the program. Information on accomplishments to date is presented for each subtask with overall milestone achievements summarized in Table I.

History

Torrey Pines Technology (TPT) submitted a proposal (GACP 42-176) on February 16, 1984 at the request of Philadelphia Electric Company to conduct an independent design review of Limerick's Core Spray System (CSS). Subsequent discussions between PECO, TPT, and the NRC resulted in a program plan which was presented to PECO on May 4, 1984. The following week the program plan was presented at a May 9, 1984 public meeting in NRC's Bethesda, Maryland office. A May 15, 1984 letter to Philadelphia Electric Company found the program plan acceptable subject to a few programmatic clarifications and protocol modifications. The original program plan dated May 7, 1984 was changed to incorporate the NRC clarifications and was issued as Revision A.

Detailed Status

On May 15, 1984 Torrey Pines Technology's project team leaders held a kick-off meeting in San Francisco at the Bechtel office. In attendance were project and/or technical representatives from Bechtel, GE, PECO, and the NRC. The TPT project team presented and explained the program plan and the five level review process for potential findings. Specific design documents and information initially required for the design review were requested of designated representatives.

The TPT project office initiated the independent design review program plan on May 21, 1984 when concurrence to the revised Program Plan was given by the NRC. Initially the project organization was established in response to the proposal. Assembly of the project manager and task leaders followed with specific selection of the supporting technical staff. Project specific procedures were initiated after indoctrination training of assigned personnel in the project scope and objectives. A Quality Assurance Program Document (QAPD-2524) was generated, reviewed, approved internally, and sent to PECO on May 17, 1984 for their approval before publication. The detailed status for each subtask identified in the Program Plan is presented below.

Task A Design Procedure Review

- A1 Procedure 2524-PD-1 was completed and issued on 5/24/84.
- A2 A detailed description of the complete structure of the design control procedures applicable to the CSS design work is in progress.
- A3 TPT has received some copies of the design procedures. On-site visits will be required to complete the selection.
- A4 A request was made of Bechtel to identify the design control procedures used for the Limerick plant to those used for the Palo Verde plant.
- A5 No activity to date
- A6 No activity to date.
- A7 No activity to date.

Task B Design Procedure Implementation Review

- B1 Procedure 2524-PD-2 was completed and issued on 5/24/84.
- B2 No activity to date.
- B3 No activity to date.
- B4 No activity to date.
- B5 No activity to date.

Task C Technical Review

- C1 Procedure 2524-PD-3 was completed and issued on 5/29/84.
- C2 The preparation of the design chain which identifies the major design organizations and their interfaces for major structures and components in the Core Spray System was initiated.
- C3 The initial selection of specific components and major features have been identified for the detailed design review.
- C4 Obtaining current design documents from Bechtel continues. Obtaining design documents from GE is pending until the confidentiality agreement is signed. A visit to Bechtel's offices on May 23 and 24 was productive in screening drawings and calculations for review purposes. Specific calculations and/or portion of calculations for piping, pipe supports, process flow, and high/moderate energy pipe breaks were identified. Responsibilities were also established for the qualification of GE and Bechtel furnished components.

The technical design review of ASME Class 1 piping design was initiated.

- C5 No activity to date.
- C6 No activity to date.

Task D Physical Verification

- D1 Procedure 2524-PD-4 was prepared and approved. Publication date was 5/31/84.
- D2 The portions of the CSS to be physically verified in an on-site walkdown have been identified.
- D3 The walkdown will commence the week of June 3, 1984.
- D4 No activity to date.

Task E Potential Findings

- F1 The project manager established the Potential Findings Review Committee on May 18, 1984. The committee members are senior technical personnel with broad experiences in engineering. The committee members are as follows:

S. L. Koutz, Chairman	Chief Engineer
F. O. Hall	Mgr. Mechanical & Electrical Engineering
R. G. Wunderlich	Mgr. Component Engineering
T. R. Colandrea	Director, QA and Compliance
A. M. Harris	Senior Technical Advisor

This committee will be responsible for the processing of any potential findings as described in Task E of the program plan.

- E2 The criteria for determining the degree of impact of Potential Findings on the design adequacy of the Limerick Core Spray System has been established and is documented in a detailed procedure under Task E3.
- E3 Procedure 2524-PD-5 was completed and issued on 5/30/84.

NOTE: All milestones for Task E are complete. Future status reports will include data on potential findings.

Task F Administrative and Reporting

Project Management's initial effort has involved the selection, indoctrination, and training of personnel to the program, the development of schedules and cost data to achieve task objectives, a Quality Assurance Program Document (QAPD) and Project Directives for direction and guidance. A procedure, 2524-PD-6, on protocol for maintaining independent relationships in communication between PECO, Bechtel, GE and TPT was written and will be issued by 6/1/84.

TABLE I
CORE SPRAY SYSTEM
INDEPENDENT DESIGN REVIEW
TASK/MILESTONE STATUS

<u>Milestone</u>	<u>Subject</u>	<u>Sch</u>	<u>Actual</u>	<u>Document</u>
A1	Procedure/Checklist	5/30	5/24	2524-PD-1
A2	Procedure Structure	6/15		
A3	Access Design Procedures	6/15		
A4	Bechtel Review	7/05		
A5	PECO/GE Review	7/05		
A6	Time-period Procedures	7/10		
A7	Task Summary	7/24		
B1	Procedure/Checklist	5/30	5/24	2524-PD-2
B2	Document Selection	6/15		
B3	Document Location	7/01		
B4	Document Review	7/27		
B5	Task Summary	8/10		
C1	Procedure/Criteria	5/30	5/30	2524-PD-3
C2	Design Chain	6/08		
C3	Feature Selection	Cont		2524:ENG:02:AS:84
C4	Design Review	8/10		
C5	Independent Analysis	7/27		
C6	Task Summary	8/17		
D1	Walkdown Procedure	5/30	5/31	2524-PD-4
D2	Item Selection	6/04	5/29	2524-ENG:03:AS:84
D3	Complete Walkdown	6/27		
D4	Task Summary	8/10		
E1	Establish Committee	5/30	5/18	Proj. Directive #3
E2	Define Criteria	5/30	5/25	2524-PD-5
E3	Procedure	5/30	5/30	2524-PD-5
E4	Processing PFRs	Cont		
F1	Management/Cost	Cont		
F2	Protocol Procedure	6/01		
F3	Status Reports	Cont		
F4	Information Compilation	8/15		
F5	Final Report Draft	8/24		
F6	Final Report-Issue	8/31		

cc: Judge Lawrence Brenner
Judge Peter A. Morris
Judge Richard F. Cole
Troy B. Conner, Jr., Esq.
Ann P. Hodgdon, Esq.
Mr. Frank R. Romano
Mr. Robert L. Anthony
Zori G. Ferkin, Esq.
Mr. Thomas Gerusky
Director, Pennsylvania Emergency
Management Agency
Charles W. Elliott, Esq.
Angus Love, Esq.
David Wersan, Esq.
Robert J. Sugarman, Esq.
Martha W. Bush, Esq.
Spence W. Perry, Esq.
Jay M. Gutierrez, Esq.
Atomic Safety & Licensing
Appeal Board
Atomic Safety & Licensing
Board Panel
Docket & Service Section
James Wiggins
Timothy R. S. Campbell

RELATED CORRESPONDENCE

DOCKETED
USNRC

PHILADELPHIA ELECTRIC COMPANY

2301 MARKET STREET

P.O. BOX 8699

PHILADELPHIA, PA. 19101

(215) 841-4502

84 JUN 11 P1:46

OFFICE OF SAFETY
DOCKETING UNIT
BRANCH
JUN 07 1984

JOHN S. KEMPER
VICE-PRESIDENT
ENGINEERING AND RESEARCH

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

Docket Nos.: 50-352 06
50-353 06

Subject: Limerick Generating Station, Units 1&2
SER Confirmatory Issue #1

Reference: NUREG-0991

File: GOVT 1-1 (NRC)

Dear Mr. Schwencer:

Confirmatory issue #1 of the reference requires Philadelphia Electric to revise FSAR Tables 3.2-1 and 3.2-2. Attached are draft FSAR pages that will be included in FSAR Revision 34 which will be submitted in July. The attached pages provide additional information describing Limerick compliance with Regulatory Guide 1.26, Revision 3, and the codes and standards used in construction. Providing this information satisfies the SER requirement to enable closure of confirmatory issue #1.

Sincerely,

John Ballaghan
for
J. Kemper

JLP/gra/060584925

cc: See Attached Service List

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

RELATED CORRESPONDENCE

DOCKETED
USNRC

PHILADELPHIA ELECTRIC COMPANY

2301 MARKET STREET

P.O. BOX 8699

PHILADELPHIA, PA. 19101

(215) 841-4502

'84 JUN 11 P1:46

OFFICE OF SECURITY
DOCKETING & SERVICES
BRANCH

JOHN S. KEMPER
VICE PRESIDENT
ENGINEERING AND RESEARCH

Mr. R. G. Page, Chief
Uranium Fuel Licensing Branch
Division of Fuel Cycle and
Material Safety, NMSS
U. S. Nuclear Regulatory Commission
Washington, D.C. 20555

JUN 7 1984

DOCKET NUMBER
PROD. & UTIL. DIV. 80-352/353 a

Subject: Limerick Generating Station, Unit No. 1
Special Nuclear Material License Application

Reference: Letter, B. L. Serini (NRC) to S. F. Payton (PE)
dated April 25, 1984.

File: GOVT 1-1 (NRC)

Dear Mr. Page:

In reference letter, Mr. Serini of your staff requested additional information regarding our Special Nuclear Material (SNM) license application. We have reviewed this letter and have included the requested additional information to our SNM license application.

Attachment 1 to this letter includes the pages to our application that have been revised as a result of the additional information requested. All revisions to the text on each page are indicated by a vertical line in the right hand margin of the page. Attachment 2 includes copies of the applicable parts of the Limerick FSAR referenced in the revised sections of the license application.

In preparation for movement of new fuel to the fuel floor we have need to acquire additional calibration sources containing special nuclear material and source material. A replacement page to our application (included in attachment 1) contains the information regarding these sources.

Our current construction schedule calls for fuel to be moved from the outdoor new fuel storage area to the refueling floor on July 9, 1984. To support this date we request that the remaining portion of the license authorizing the movement of fuel to the refueling floor for inspection and storage in the fuel pool be issued by July 2, 1984.

If you should have any questions or need clarification of any of this information please contact S. F. Payton (215-841-6384). Thank you for your cooperation.

Sincerely,

JW Kallaghan
for
JS Kenyon

SFP/gra/053084145

Attachments

cc: See Attached Service List

cc: Judge Lawrence Brenner (w/enclosure)
Judge Richard F. Cole (w/enclosure)
Troy B. Conner, Jr., Esq. (w/enclosure)
Ann P. Hodgdon, Esq. (w/enclosure)
Mr. Frank R. Romano (w/enclosure)
Mr. Robert L. Anthony (w/enclosure)
Charles W. Elliot, Esq. (w/enclosure)
Zori G. Ferkin, Esq. (w/enclosure)
Mr. Thomas Gerusky (w/enclosure)
Director, Penna. Emergency (w/enclosure)
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Angus R. Love, Esq. (w/enclosure)
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Robert J. Sugarman, Esq. (w/enclosure)
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Jay M. Gutierrez, Esq. (w/enclosure)
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Martha W. Bush, Esq. (w/enclosure)
Mr. James Wiggins (w/enclosure)
Mr. Timothy R. S. Campbell (w/enclosure)
Ms. Phyllis Zitzer (w/enclosure)
Judge Peter A. Morris (w/enclosure)

ATTACHMENT 1

permit night surveillance of the fuel. The first core of fuel for Unit 1 (764 assemblies) will be stored in three (3) piles with sixty-four (64) containers in each pile stacked four (4) high and sixteen (16) across; and four (4) piles with forty-eight (48) containers in each pile stacked four (4) high and twelve (12) across. A spacing of twenty-five (25) feet will be maintained between any two piles and between each pile and the New Fuel Storage Area fence. The fuel will be stored in the outer wooden Reactor Assemblies (RA) containers and each pile of fuel will be covered by a five-sided box manufactured out of corrugated metal. As a further precaution against fire, sufficient hose line will be available such that water can be directed to the fuel from two different locations. Lightning protection will be provided by an overhead transmission line. The weight of each pile of fuel is sufficient to withstand windstorms of 100 year mean recurrence interval.

1.2.2 Activities in Adjacent Areas

In the areas adjacent to the New Fuel Storage Area there exist permanent buildings. In addition there is a permanent building that will be used for offices or a change house. There is also a substation adjacent to the New Fuel Storage Area on the north side. Activities in adjacent areas will be of a nature such that the safety of the fuel will not be affected.

Equipment used to unload and inspect new fuel is located in the areas adjacent to the spent fuel pool, as well as reactor vessel components and shield plugs. Movement of fuel and certain reactor vessel components and shield plugs is administratively controlled so that the safety of the fuel will not be affected.

1.2.3 Indoor Storage Facilities and Equipment

The Spent Fuel Pool, as illustrated in Figure 1.2-14 of the Limerick Final Safety Analysis Report (FSAR), is an integral structure within the Reactor Enclosure. The fuel storage facilities and handling equipment are designated

with the issue of the ASTM specifications in effect in March 1979, as applicable.

The quality assurance program in use at the time of procurement and fabrication of the containment cans and boral conformed to the requirements of 10CFR50 Appendix B and to ANSI N45.2. A chemical analysis or neutron attenuation test was performed on each boral sheet to confirm the B-10 loading was within specifications. Physical characteristics of the boral plate such as width, length, thickness, squareness and flatness were 100% inspected to assure compliance with neutron absorber plate specifications. The containment cans were 100% dimensionally checked for length, width and thickness. All containment can welds were inspected and the containment cans were leak tested in accordance with the specifications prior to rack assembly.

To confirm that the poison cans meet the design specifications before and after their installation in the racks, all poison cans were inspected by a rack supplier Q.C. Inspector for dimensions, weld quality and the presence of boral before the cans were installed in the racks. After the poison cans were installed and the racks assembled, a final inspection was performed on the rack for dimensions and functional checkout. The functional checkout tests consisted of a dummy bundle drag check for obstructions for each can. The results of these inspections were documented and retained as permanent records.

Upon receipt at the Limerick job site, the fuel racks were reinspected for

dimensions, weld quality, cleanliness, etc. Also, an independent 100% boreal presence test and full length dummy bundle check for obstruction were performed. These test results were recorded, reviewed and are maintained as permanent records.

The controls to ensure that the poison cans are installed in their location in the racks before fuel assemblies are stored in the racks are as follows:

Each poison can is serialized and the location of each is recorded on a can location map by a rack supplier Q.C. inspector. These maps become part of the final documentation package and are reviewed by the rack supplier Q.A. Engineer for the project and the responsible PECO project engineer. Upon receipt at the Limerick job site the location of the poison cans was verified. The poison cans will not be removed at Limerick Generating Station at any time.

1.2.3.2 Reactor Enclosure Crane

The reactor enclosure crane is a bridge crane mounted on runway rails that are supported by the reactor enclosure superstructure. The reactor enclosure crane is designed to handle loads with a maximum weight of 125 tons while maintaining a minimum safety factor of 5. There is also an auxiliary hoist with a design capacity of 15 tons. The reactor enclosure crane is designed to prevent movement of the crane over the new fuel and spent fuel storage areas in the absence of specific action by the crane operator to allow such movement. Figure 1.2.3.2 illustrates the areas of restricted crane movements. In

addition, the movement of loads heavier than fuel assemblies over the spent fuel pool, utilizing the reactor enclosure crane, is prevented by the use of administrative controls addressing the guidance of NUREG-0612 and by electrical interlocks (see applicable Limerick FSAR Sections 9.1.2.3, 9.1.5.2.e, and 9.1.5.4).

1.2.3.3 Fuel Servicing Equipment

The fuel servicing equipment consists of apparatus as described below:

a) New Fuel Inspection Stand

The new fuel inspection stand (Figure 1.2.3.3(a)) serves as a support for the new fuel bundles undergoing receiving inspection and provides a working platform for technicians engaged in performing the inspection.

b) Channel Handling Tool

The channel handling tool (Figure 1.2.3.3(b)) is used in conjunction with the fuel preparation machine to remove, install, and transport

1.2.4 Fire Protection

1.2.4.1 New Fuel Storage Area

The fire protection in the New Fuel Storage Area as described in Section 1.2.1.1 of this application consists of five-sided boxes manufactured out of corrugated metal placed over each pile of fuel. In addition, sufficient hose lines will be available such that water can be directed to the fuel from two different locations. Access to this area will be controlled as described in the Physical Security Plan (see Section 1.3 of this application). A fire hydrant or portable fire extinguishers will be available for use during the transfer of the new fuel from the New Fuel Storage Area to the Reactor Enclosure.

1.2.4.2 Reactor Enclosure

The following fire protection components will be operative prior to new fuel being moved within the Reactor Enclosure. At least one of two water sources, i.e., cooling tower basins (see Section 9.5.1.2.2.1 of the Limerick FSAR), and two fire pumps (see Section 9.5.1.2.2.2 of the Limerick FSAR) capable of providing necessary water flow rates and pressures to the hose stations or hydrants protecting the Reactor Enclosure airlock and the refueling floor will be available.

1.3 Physical Protection

Applicant's plan for the Physical protection of the material to be received pursuant to the requested license is contained in a document entitled "Limerick Generating Station, Physical Security Plan for Protection of Special Nuclear Material of Low Strategic

Significance" dated April, 1983 and subsequent amendments which is Exhibit 2 to this Application. Since the Security Plan contains Safeguards Information detailing Applicant's security measures for the physical protection of special nuclear material, the Security Plan was transmitted under separate cover with a request that it be withheld from public disclosure.

2.0 HEALTH AND SAFETY

2.1 Radiation Control

This Section provides information regarding radiation safety at Limerick Generating Station.

2.1.1 Minimum Qualifications for Positions Having Radiation Safety Responsibilities

The minimum qualifications for the Senior Health Physicist (Radiation Safety Officer), are those outlined in Section 4.4.4 of ANSI/ANS-3.1-1978, "American National Standard for Selection and Training of Nuclear Power Plant Personnel." Any individual who would temporarily replace the Senior Health Physicist will have the minimum qualifications described in Section 4.4.4(d) of ANSI/ANS-3.1-1978. The Applied Health Physicist and Support Health Physicist (Assist RSO's) will have as a minimum a 4 year degree in Health Physics or a related field and at least 24 months applied Health Physics experience.

2.1.2 Responsibilities for Radiation Safety Personnel

The responsibilities for the key radiation safety personnel are described by the following "Radiation Safety Program" description.

The radiation safety program will be directed by the Senior Health Physicist. Assisting the Senior Health Physicist are the Support Health Physicist and the Applied Health Physicist. Both of these positions have the authority to act for the Senior Health Physicist in his absence.

The objectives of health physics operations are to:

- a. Detect, identify, and define radiation hazards.
- b. Provide protection for personnel against radiation hazards.

c. Control plant-related radiation
exposures (occupational and general

public) to levels as low as reasonably achievable (ALARA).

- d. Conduct plant activities in conformance with authorized procedures and applicable regulations.

These objectives are accomplished or enhanced by the various training programs, by the use of prepared Health Physics operating procedures, by periodic review and revision of procedures, by evaluation of activities for ALARA purposes, and by the control of plant operations to minimize occupational exposures and releases to the environment.

Health Physics operations include the posting, notification, and reporting provisions of 10CFR, Part 19, and General Employee Training or, in some cases task specific instruction, provides the requisite instruction to workers.

Health physics operations conform with the guidelines of Regulatory Guide 8.2 (Rev. 0) and of ANSI N13.2-1969, Guide for Administrative Practices in Radiation Monitoring, with the clarification that controlled areas which are locked or otherwise prevent personnel access are not required to be surveyed at a specific periodicity. Sections 13.1.2.12, 13.1.2.13 and 13.1.2.14 of the Limerick FSAR describe the responsibilities of the Senior Health Physicist, Physicist-Applied, and the Physicist-Technical Support respectively. These positions are and will be functional during receipt and handling of SNM. Section 13.2 provides a description of various training programs at LGS. Although the programs described in this section do not apply specifically to Health Physics requirements of the SNM license, all technicians involved in the receipt and handling of SNM are trained and qualified in those Health Physics procedures associated with SNM activities. Sections 13.5.1.21 and 13.5.2.2 of the Limerick FSAR address the preparation and use of Health Physics

procedures. Those procedures used for the receipt and handling of SNM have been prepared and used in accordance with these sections. Section 12.1 of the Limerick FSAR describes the policy, design and operation considerations of the LGS ALARA program. Although not specifically addressed in Section 12.1, the receipt and handling of SNM will be consistent with the considerations set forth in this section and implemented through station HP procedures. Section 17.2A of the Limerick FSAR describes the quality assurance program during the operations phase and addresses the administrative controls for various operational activities, including Health Physics. These controls are implemented in administrative procedures which address approval of procedures, training, control of survey equipment, etc.

The portion of the Health Physics program related to special nuclear materials is outlined as follows:

RADIATION PROTECTION PERSONNEL

Senior Health Physicist (Radiation Safety Officer)

The Senior Health Physicist reports through the Assistant Station Superintendent to the Station Superintendent and receives technical direction and support from the Offsite Director-Radiation Protection Section.

The Senior Health Physicist corresponds to the Radiation Protection Manager as described in Regulatory guide 8.8-1977 (Revision 3) and 8.10-1977. His duties/responsibilities in this capacity include:

- a. Developing and implementing an effective radiation exposure control and measurement program in consonance with the PECO ALARA policy.
- b. Ensuring that exposure measurement and control programs are periodically reviewed and that appropriate revisions and corrective actions are taken when the results of these programs indicate that such actions are needed to conform to the PECO ALARA policy.
- c. Preparing and reviewing procedures for implementing the ALARA policy.
- d. Ensuring that the resources needed to implement the ALARA policy are available and used.
- e. Participating in reviews, including design and procedure reviews at the Plant Operations Review Committee (PORC)

level, of facilities, activities, and
equipment

that can affect potential radiation exposures. (Note: The PORC functions to advise the Station Superintendent on matters related to nuclear safety. The Committee consists of plant staff members as described in Limerick FSAR Section 13.4.2. Qualification requirements for plant staff members are as specified in ANSI/ANS-3.1-1978 and Regulatory Guide 1.8 (Rev. 1) as described in Limerick FSAR Section 13.1.3.1. Relative to the SNM license, the PORC is responsible for the review of procedures, and changes thereto, that affect nuclear safety).

- f. Supervising radiation, surface contamination, and airborne activity surveys and supervising the review of resulting data to identify locations, operations, and conditions that have the potential for causing significant exposures and developing appropriate means for reducing such exposures.
- g. Participating in the development of training programs related to the ALARA program to ensure that personnel are aware of PECO management's commitment to ALARA and are instructed in ways of reducing exposures that are related to work in radiation areas or that involve radioactive materials.
- h. Supervising the radiation surveillance program and the collection, analysis, and evaluation of data from radiological surveys and from personnel exposures and doses, including the use of the radiation work permit data.
- i. Supervising and training of the health physics staff.

- j. Providing appropriate data and information related to the ALARA program, and results, to the Station Superintendent and to the Director-Radiation Protection Section to keep company management informed about the program.

- k. Acting as Radiation Protection Manager. In his absence, a person temporarily filling this position will have a BS degree in engineering or science with two years experience in radiation protection, one year of which shall be

The radiation hazards associated with the receipt and movement of SNM are minimal. However, in keeping with management's policy that radiation exposure to station personnel and the general public be kept "As Low As Reasonably Achievable" (ALARA), the following steps are taken:

- A. During transfer of fuel from the storage area to the refuel floor, HP will be providing full coverage of all activities including surveys and smears of the shipping containers and their inner containers.
- B. A continuous air monitor (CAM) shall be present and operable on the fuel floor prior to and during the handling of new fuel assemblies.
- C. During the inspection and handling of the new fuel, HP will also be providing full coverage of all activities including surveys and smears inside the inner container lid, the outer surface of the plastic sleeve, and the fuel assemblies.
- D. During the transfer, handling and inspection of new fuel, access is restricted to only those individuals that have a need to be in the area as defined by an Access Control list, thereby reducing exposures. Personnel on the list will have received training on the necessary radiological precautions to be taken.

2.1.3 Training and Experience

The experience of the Health Physicists is presented in Figures 2.1.3(a) - 2.1.3(z). The training necessary for Health Physicists is outlined in Section 12.5.3.5 of the Limerick FSAR.

2.1.4 Procedures and Equipment for Checking Contamination

The Health Physics personnel will be notified when a shipment of new fuel or instrumentation containing Special Nuclear Material arrives on site. Health Physics personnel shall perform complete radiation and contamination surveys of the outside of the transport vehicle to ensure that the radiation levels are within acceptable limits. If all survey data is within limits, the vehicle will be moved to the New Fuel Storage Area to proceed with unloading. If survey data is above established limits, appropriate actions, as defined in Plant Operations Review Committee (PORC) approved written station procedures, will be followed.

2.1.5 Calibration and Testing of Instrumentation

All instruments shall be tested and calibrated routinely in accordance with approved station procedures. The portable survey instruments that are used during the receipt and handling of all SNM are calibrated every six months. Instrument calibration will be performed by qualified station personnel or through a vendor. Each instrument will bear a sticker indicating the date when recalibration is due.

2.1.6 Procedures and Equipment Used to Meet Applicable Sections of 10CFR Part 20

The Limerick Generating Station will be operated and maintained in such a manner as to ensure that occupational radiation exposures are ALARA and

that protection against radiation is in accordance with 10CFR, Part 20.

Health Physics procedure #HP-210 "Administrative Dose Limits, Guidelines and Notification Requirements" provides the methods by which exposures are controlled at the Limerick Generating Station. It is PECO policy to maintain exposures of personnel at LGS to radiation below the limits specified in 10CFR20.101.

The Administrative Exposure Guides in effect at Limerick Generating Station are as follows:

Whole Body; head, trunk, active blood forming organs, lens of eyes, or gonads.

- A. 100 mRem/Quarter for Non-PECO personnel without a current NRC Form 4.
- B. 1000 mRem/Quarter for PECO personnel without a current NRC Form 4.
- C. 2500 mRem/Quarter with a current NRC Form 4 and lifetime accumulated dose which will remain less than $5(N-18)$ Rem where N is the individual's age in years at his last birthday.
- D. 300 mRem/day if Quarterly balance is greater than 400 mRem. 100 mRem/day if quarterly balance is less than or equal to 400 mRem.
- E. No entry into the Radiologically Controlled Area without Senior Health Physicist approval if quarterly balance is less than or equal to 100 mRem.
- F. There will be no work in high radiation areas (greater than 100 mRem/hr) by individuals with remaining permissible quarterly balances less than 400 mRem

unless approved by the Senior Health Physicist.

- G. No PECO employee's yearly dose will exceed 4500 mRem without prior approval of the Station Superintendent or his alternate.
- H. Prior authorization must be obtained via a dose extension to permit exposures in excess of the Daily Guides which are as follows:

Hand and Forearms; Feet and Ankles

- 1. 1,500 mRem/day
- 2. 15,000 mRem/Quarter

Skin of Whole Body

- 1. 600 mRem/day
- 2. 6,000 mRem/Quarter

The minimum frequency for reading personnel dosimeters (TLD's) is one month unless otherwise specified by the Senior Health Physicist. In addition, individuals will also be provided with direct reading dosimeters so that exposures may be estimated on a daily basis.

2.1.7 Provisions for Disposal of Radioactive Wastes

Radioactive waste will not normally be discarded prior to plant operation. The small quantities of radioactive waste generated in the surveying of SHM items for contamination will be stored in the Source Storage Room or other approved location until a contract with a commercial waste disposal service is established. Shipment of radioactive waste is strictly controlled by Health Physics Procedures which comply with 10CFR71 and 49CFR 171-178.

2.2 Nuclear Criticality Safety

2.2.1 Minimum Qualifications for Positions Having Nuclear Criticality and Fuel Handling Responsibilities

The key position having nuclear criticality safety and fuel handling responsibilities is the Reactor Engineer. He is responsible in as much as he generates procedures for fuel handling that incorporates nuclear criticality safety guidelines. These procedures are then reviewed and approved by the PORC. The minimum qualification for the Reactor Engineer are those stated in ANSI/ANS-3.1-1978 Section 4.4.1.

2.2.2 Responsibilities for Personnel Having Nuclear Criticality and Fuel Handling Responsibilities

The key personnel responsible for nuclear criticality safety and fuel handling is the Reactor Engineer. The Reactor Engineer reports to the Technical Engineer and is responsible for determining and monitoring core performance and for establishing appropriate operating guides and procedures to ensure safe, economical reactor operation in compliance with the operating license and technical specifications. The Reactor Engineer provides technical advice and

stored no higher than a four high configuration. The criticality analysis to support the safety of the above described array can be found in a May 4, 1978 letter (and its attachments) from A. L. Kaplan (General Electric Company) to L. C. Rouse (Nuclear Regulatory Commission). An area survey at the final temporary storage location shall be performed by Health Physics personnel on an as required basis. The minimum distance between a pile of loaded shipping containers on the refueling floor; and the unloading station, inspection stand, and open shipping containers will be five (5) feet. The minimum distance from the spent fuel racks to a pile of loaded shipping containers on the refueling floor will be 23 vertical feet. By maintaining a minimum distance of five (5) feet between the pile of loaded shipping containers and the other areas where fuel assemblies will be handled precludes the possibility of accidental criticality.

2.2.5.4 Removal of Fuel Bundles From Shipping Container and Inspection

Before fuel bundles are removed, the metal RA containers (lids removed) are upended and placed in the unloading station located near the new fuel inspection stand. The metal container end piece is then removed. Health Physics personnel make a survey of removable contamination on the outside of the plastic bag covering the bundle. The bundle is then visually inspected for damage. The respective fuel bundle is removed via the auxiliary hoist or cherry picker and transferred to and secured in the new fuel inspection stand. The acceptance inspection is

performed with either one or two fuel bundles in the vertical position. Fuel bundles that do not pass acceptance inspection are returned to their shipping containers. A Defective Tag will be placed on the exterior of the shipping container and the discrepancies noted.

2.2.5.5 Channeling in the New Fuel Inspection Stand

Upon completion of the fuel inspection, each bundle is channeled in the New Fuel Inspection Stand. A channel is selected and positioned above the fuel bundle. The channel is lowered onto the fuel bundle and secured with the Channel Fastener Assembly. Following the completion of the channeling process, each assembly is transferred to a

storage location in the Spent Fuel Storage Pool by the refueling bridge.

2.2.6 Exemption

2.2.6.1 Criticality Accident Requirements

The procedures and storage facilities described in this application provide assurance that inadvertent criticality cannot occur during receipt, possession, and storage of new fuel assemblies at Limerick Generating Station.

The General Electric shipping containers in which fuel will be received meet the Fissile Class I requirements defined by 10CFR71. In addition, the Spent Fuel Pool is designed to ensure subcriticality by at least five (5) percent Δk under all conditions (see Section 2.2.4.3). Furthermore, the procedures for unloading and inspecting the new fuel are based in part on the prevention of criticality during these operations.

The total mass of SNM contained in all instrumentation (see Section 3.0) is less than 15 grams. Accordingly, no special precautions to prevent criticality are required when handling the new instrumentation. Based on the above discussion, Philadelphia Electric Company requests exemption from the requirements of 10CFR70.24 as provided in 10CFR70.24(d).

2.3 Accident Analysis

2.3.1 New Fuel Storage Area

In the New Fuel Storage Area, only one shipping container at a time will be handled by any single fork-lift truck during loading and unloading of the flatbed truck. General Electric Company has conducted hypothetical accident condition tests of the inner metal shipping containers in the sequence specified in Appendix B to 10CFR71 and the inner metal containers passed the acceptance criteria as described in NRC Certificate of Compliance USA/4896/ for the General Electric RA Series Shipping Package.

2.3.2 Spent Fuel Pool

No adverse reactivity effect is expected from dropping a fuel assembly on top of a fully loaded storage rack during handling because of the large water thickness (approximately 10 inches) existing between the top of the assemblies already inside the cavities and the dropped assembly resting on top of the rack.

The dropping of an assembly outside the rack is a possible event because of the unobstructed water area existing between the periphery of the storage rack and the side walls of the pool. The K_{eff} for this case was 0.8861, an increase of $k=0.003$ over the same geometry without the dropped fuel. A more detailed discussion of this case can be found in Section 9.1.2.3.1.5(b) of the Limerick Generating Station FSAR.

The structure of the racks is designed to remain functional and to maintain the required spacing between stored fuel assemblies in the event of impact of a fuel bundle dropped on the racks from an elevation of 36 inches. (The maximum height that a fuel assembly will be carried over the spent fuel racks is 36 inches). See Section 9.1.2.3.2.1 of the Limerick Generating Station

FSAR for a more detailed discussion of this case.
In addition, Section 9.1.2.3.2.3 of the Limerick

FSAR addresses the analyses of a dropped fuel bundle.

Extreme caution is exercised during fuel handling to prevent the fuel assembly from striking another fuel assembly or other structures. In the unlikely event that a fuel assembly would be dropped, all fuel handling activities would be stopped. An assessment of the damage would be made and appropriate corrective action taken prior to authorization to continue fuel handling activities.

The new fuel assemblies will be stored in the spent fuel pool either underwater or dry. The determination of whether the new fuel will be stored wet or dry is dependent upon construction scheduling considerations at Limerick Generating Station.

3.0 Other Materials Requiring NRC License

The following instrumentation (and spares as required to replace defective instrumentation) will be shipped to the Limerick Generating Station site commencing upon issuance of the Special Nuclear Material License. We anticipate requesting 43 LPRM's (four detectors per LPRM) in September, 1983 and 21 or 22 spares for installation following the Operational Hydrostatic Test of the reactor vessel. SRM, IRM and TIP detector shipment and installation is to be deferred until a time closer to fuel load to minimize the possibility of damage. Storage duration of the detectors at the site is scheduled to be as short as possible.

3.1 Instrumentation

The following instrumentation contain uranium enriched in the U-235 isotope (as indicated below) in sealed units.

- a) Source Range Monitors (SRM): 8 detectors (4 per unit) at 2.7 mg U-235 each (21.6 mg total), > 90% U-235.

- b) Intermediate Range Monitors (IRM): 16 detectors (8 per unit) at 0.75 mg U-235 each (12.0 mg total), > 90% U-235.
- c) Local Power Range Monitors (LPRM): 344 detectors (172 per unit) at 0.22 mg U-235 each (75.7 mg total) and 0.83 mg U-234 each (285.5 mg total),

and .02 mg U-238 (6.9 mg total), with a weight percent composition of 20.6% U-235, 77.6% U-234 and 1.8% U-238.

- d) Traversing-In-Core Probe (TIP): 10 detectors (5 per unit) at 0.75 mg U-235 each (7.5 mg total), > 90% U-235.

The following instrumentation contain either Pu-239, Th-230 or U-238 in the form of plated sources.

- a) Two calibration sources containing a total of no more than 1500g of depleted U-238.
- b) Two calibration sources containing a total of no more than 50 micrograms of Pu-239.
- c) Seven calibration sources containing a total of no more than 10 micrograms of Th-230.

3.2 Storage and Handling Conditions

Upon receipt, the LPRM's will be taken to the refueling floor. In case of unanticipated scheduling problems where the LPRM's cannot be stored on the refueling floor, the LPRM's will be moved to the Stores Warehouse. SRM, IRM and TIP detectors will be received and initially stored on the Limerick Generating Station site in an area located in the Stores Warehouse.

The calibration sources described in Section 3.1 will be stored in the Calibration Source Room or other area where access can be similarly controlled. All storage areas are approved by the Senior Health Physicist. Access to, authorized use and accountability of these sources are outlined in existing PORC approved plant procedures (HP-700 and HP-711). The sources will be tested in accordance with 10CFR31.5(c)(2).

An area on level 253' in the southwest section of the Unit 1 Reactor Enclosure will be temporarily established for the storage prior to reactor load of SRM, IRM and

possibly TIP detectors. An additional area on level 253' in the northeast corner of the Unit 1 Reactor Building will be temporarily established for the storage of TIP detectors prior to reactor load.

The final location that the SRM's, IRM's and LPRM's will be stored is in the reactor vessel. The final storage location of the TIP detectors will be within the TIP machines and associated tubing. Spares and defective equipment (if any) will be stored as described above.