U. S. NUCLEAR REGULATORY COMMISSION
REGION I

Report Nos. 50-352/90-21
50-353/90-20

Docket Nos. 50-352
50-353

License Nos. NPF-39
NPF-85

Licensee: Philadelphia Electric Company
Post Office Box 7520
Philadelphia, Pennsylvania 19101

Facility Name: Limerick Generating Station

Inspection At: Chesterbrook and Pottstown, Pennsylvania

Inspection Conducted: August 27-31, 1990

Inspectors: _____ 11/15/90
C. G. Amato, Regional Team Leader, Division of Radiation Safety and Safeguards — date

W. Lancaster, Region I
F. Lopresti, Region I

Approved by: _____ 11/15/90
William J. Lazarus, Chief, Emergency Preparedness Section, DRSS — date

Inspection Summary: Inspection on August 27-31, 1990 (Combined Inspection Report Nos. 50-352/90-21 and 50-353/90-20)

Areas Inspected: Announced, routine safety inspection of the licensee's emergency preparedness program.

Results: No violations, deviations, or unresolved items were identified.

DETAILS

1. Persons Contacted

The following licensee staff members attended the entrance or exit meetings or were interviewed by the inspectors. Staff were assigned to: Nuclear Group Headquarters (NG), the Limerick Generating Station (LGS), or PECo Headquarters (HQ).

***C. Adams, Manager, Emergency Preparedness, NG
P. Adelizzi, Senior Engineer, HQ
C. Baer, Analysts, NG
***R. Brown, Site Emergency Preparedness Supervisor, LGS
***R. Charles, Manager, Nuclear Support Division, NG
**V. Civientniewicz, Superintendent, Training Department, LGS
**J. Doering, Manager, Projects Division, LGS
***T. Dougherty, Services Training Supervisor, Training Department, LGS
***P. Ducca, Jr., Support Manager, LGS
R. Geiger, Manager, Departmental Operations, Corporate and Public Affairs, HQ
R. Gill, Branch Head, Nuclear Security, LGS
*R. Gropp, Engineer, Nuclear Licensing Section, LGS
A. Hill, Document Administration Center, LGS
D. Helwig, Vice President, Nuclear Engineering and Services, NG
N. Kenny, Trainer, Training Department, LGS
***R. Kinard, Offsite Support Branch Lead, LGS
**C. Lauletta, Nuclear Training Supervisor, LGS
G. Leitch, Vice President, LGS
*R. Mandik, LGS Branch Lead, NG
*M. Roache, Peach Bottom Atomic Power Station Branch Lead, NG
W. Rogers, Emergency Preparedness Trainer, Training Department, LGS
R. Smith, Senior Vice President, NG
A. Yarmer, Simulator Instructor, Training Department, LGS

*Denotes those staff members who attended the entrance meeting.
**Denotes those staff members who attended the exit meeting.
***Denotes those staff members who attended the entrance and exit meetings.

A. K. Bhattacharyya, Nuclear Engineering, Commonwealth of Pennsylvania also attended the exit meeting.

The inspector interviewed and observed the action of other licensee personnel.

2. Licensee Action on Previously Identified Items

The following items were identified during a previous inspection (Combined Inspection Report Nos. 50-352/89-11 and 50-353/89-17). Based on observations made by the NRC inspectors, review of the Emergency Plan and Implementing Procedures and interviews with licensee staff, these items were satisfactorily addressed by the licensee and are closed.

(CLOSED) UNR 89-11-02 and UNR 89-17-02: Inadequate control of Emergency Plan (EP) and Emergency Plan Implementing Procedures (EPIPs).

A procedure to control distribution of these documents was approved June 7, 1990, entitled "Control of Procedures and Certain Documents." In addition, an individual experienced in document control was appointed as the Document Control Supervisor. This supervisor has developed a document control improvement plan which has been implemented. Following Plant Operating Review Committee approval, a chain-of-custody is established. Upon receipt at the Document Control Center (DDC), the approved procedure is logged in, administratively checked, reproduced and distributed. A Procedure Change Clerk inserts the changed procedures, and date and initials a Document Control Form which is returned to the DDC. Superseded procedures are destroyed. Acknowledgement forms are used for off-site distribution. Distribution is effected in accordance with a distribution list.

(CLOSED) NOV 89-11-01 and 89-17-01: Protective Action Recommendations (PARs) were not consistent with regulations as required by 10 CFR 50.47(b)(10) and senior operators were not trained to respond to fast-breaking accidents.

EP-101, "Classification of Emergencies", was approved on August 24, 1990. This classification table includes for each General Emergency, a predetermined PAR of either sheltering or evacuation, as a function of distance and sector. This format meets regulatory requirements and is consistent with the guidance of NUREG-0654 which encourages the development and use of predetermined PARs for rapidly-breaking accidents. Senior operators have received classroom, table-top and simulator training in the use of this EP, including training for fast-breaking accidents on the simulator. In addition to plant conditions, projected dose equivalent values are also used to determine a PAR and the extent of protective action.

3. Operational Status of the Emergency Preparedness Program

3.1 Response to Actual Situations Requiring Classification

To determine if EP-101, "Classification of Emergencies" was adequate and operator training effective, the inspector reviewed the records for classification of actual events.

Three actual Unusual Events were declared since the last inspection. All were correctly classified and notifications made within the time limits set by regulations. Termination calls were also made.

Based on the above review, this portion of the licensee's emergency preparedness program is acceptable.

3.2 Audit/Reviews

10 CFR 50.54(t) requires an audit/review at least every twelve months. Nine additional requirements are also listed in this citation. The inspector reviewed the licensee's Quality Assurance (QA) Procedures and the audit/review report were reviewed and auditor questioned by the inspector to determine if regulatory requirements were met.

The licensee's QA program is delineated in Technical Specification 6.5.2.8.a. Audits are based on Quality Assurance Procedure (QAP) NQA-21 (audit techniques) and the Master Audit Plan (listing of audit items). The QAP and Master Plan were followed. An audit plan was developed, entrance and exit meetings were held, auditors were independent of the program audited (contractor personnel were also used), Commonwealth/local government/licensee interface adequacy was determined (government officials were contacted), drills were observed and NRC inspection procedures and INPO guidelines were consulted. QA reports are distributed to upper management who may, if needed, resolve disputed items.

Both nuclear stations (Peach Bottom and Limerick) and Nuclear Group Headquarters were audited. Attachments to Audit Report CA 89-06 dealt with each corporate entity. The scope of the audit included elements necessary to ensure an adequate emergency preparedness program is in place. Eight program elements were audited at Limerick and eight Corrective Action Requests issued to which the licensee responded. Nine program elements were audited at Nuclear Group Headquarters including the Emergency News Center. The chief finding was that previously identified conditions adverse to quality had not been given appropriate corrective action. These deficiencies relating to the Emergency News Center were brought to the attention of the Senior Vice President, Corporate and Public Affairs. An inspection of the Emergency News Center (ENC) and interviews by the inspector with ENC staff showed all necessary corrective actions were taken.

The 10 CFR 50.54(t) review was done by a contractor. The licensee/government interface was determined to be adequate. Copies of these reports were offered to offsite governments.

Based on the above review, this portion of the licensee's emergency preparedness program is acceptable.

3.3 Emergency Facilities

Emergency Response Facilities (ERFs) were inspected to determine if they were maintained in a state-of-readiness.

The Control Room, Operations Support Center, Technical Support Center, Emergency Operations Facility and the Emergency News Center were inspected.

ERFs were checked on a sampling basis. Plans and procedures were current and in place. Each facility was checked for a current copy of EP-101, "Classification of Emergencies." This Procedure was current at all ERFs. Maps, status boards, weather boards, unit diagrams and supporting documents were available. All communication systems tested, including the NRC's Emergency Notification System and Health Physics Network, were functional. Facsimile machines and copiers were available.

Based on the above, this portion of the licensee's emergency preparedness program is acceptable.

3.4 Knowledge and Performance of Duties (Training)

10 CFR 50.47(b)(15) and Section IV.F. of Appendix E to 10 CFR 50 establish regulatory standards and requirements for training licensee Emergency Response Organization (ERO) members and Emergency Planning Zone (EPZ) Emergency Workers (EWs). The licensee's Limerick Generating Station's (LGS) training manual, training procedures, lesson plans and records were reviewed, and trainers interviewed to determine if regulatory standards and requirements were met.

ERO training is the responsibility of the LGS Training Department (TD). Training is given in keeping with the TDs training manual. The TDs Nuclear Training Section is responsible for Emergency Preparedness Training (EPT). Two Health Physics trainers, one of whom is a consultant, give EPT. EPT is based on task analysis. A training matrix and lesson plans have been developed. EPT is scheduled throughout the year on a six-week cycle. If necessary, one-on-one training is given to senior managers and vice presidents. A computerized data base tracks ERO members requalification status. Requalification is based on factual and written examinations, or a combination of these. About 500 of the LGS staff are ERO qualified, with at least four managers qualified for key ERO positions including forty Operations Support Center Coordinators. Post drill and exercise critiques are reviewed for training issues. An informal, as opposed to a formal, method exists for the TD to receive emergency plan and procedure changes. An EPT question bank is under development.

Reactor Operators are trained in emergency preparedness by operator training and the Site Emergency Preparedness Supervisor, who was a formerly licensed Senior Reactor Operator. Operators have been trained and qualified to respond to rapidly-breaking accidents, classify and develop Protective Action Recommendations (PARs). To assist operators in classification, referrals to EP-101 are placed in the Trip Procedures. The simulator has been programmed to replicate fast-breaking accidents taking operators into the Site Area Emergency and General Emergency within a matter of minutes. Tabletops and lectures are also used. The inspector observed a rapidly-breaking accident on the simulator and concluded it met the intended purpose. Use of predetermined PARs, based primarily on plant conditions and secondly on projected dose values, meets regulatory requirements and is consistent with the guidance given in NUREG-0654.

Operators and technical staff are trained in Core Damage Assessment and Mitigation, and Thermal-Hydraulics. Operators are given training in the use of: the Radiological and Meteorological Monitoring System; Emergency Response Facility Display Systems; Accident and Transient Analysis; Damaging Operating Conditions, Hydrogen Hazards, and Lessons-Learned from TMI-2 and Chernobyl.

The responsibility for developing and implementing an Accident Manager (AM) program has been given to the Nuclear Group Headquarters Emergency Preparedness Program (EPP). AM is perceived by the licensee to include a set of guidance tables to be used by Technical Support Center (TSC) Engineers. The tables will supplement Emergency Operating Procedures. Computational aids will prompt the Emergency Directors at the TSC to enter AM guidance which will identify preventive and mitigative actions. The licensee will draw upon the BWR Owners Group Severe Accident Evaluation Committee. The EPP has hired a mechanical engineer with Probability Risk Assessment capability to support this effort. Resources from the LGS will also be used.

Training of Emergency Planning Zone emergency workers is in the responsibility of the EPP. This training is provided by a contractor. Over 1700 emergency workers have been trained in 129 classes. Training is offered to emergency worker staffs of the risk, impact and support centers, local governments and special districts. In order to handle rumor control, 450 PECo Customer Service representatives have been trained in appropriate techniques.

Based on the above, this portion of the licensee's emergency preparedness program is acceptable.

3.5 Organization and Management Control

The inspector reviewed the licensee's organization structure and control systems to determine if the structure and controls were adequate to ensure an effective EPP.

PECo has established a Nuclear Group headed by a Senior Vice President. This group consists of three departments each headed by a vice president. The departments are: Limerick, Peach Bottom, and Engineering and Services. The departments are subdivided into divisions. Emergency preparedness at Group Headquarters and LGS is a Nuclear Support Division responsibility and is one of four Division Branches. Six units comprise the EPP; four of these units are located at Group Headquarters. The LGS unit is headed by a former senior reactor operator supported by an on-site staff of three. The Group units have lead responsibility for each site, off-site activities, and facilities and equipment. The total staff numbers 29, including eight at both sites. Professional disciplines include reactor operations, health physics, engineering and offsite planning. The inspector concluded the EPP is adequately staffed with the needed expertise to develop and maintain an effective operation EPP.

Following an enforcement conference, management instituted an interim improvement program. A root cause analysis was undertaken and based on the results of this, an Emergency Preparedness Improvement Program was developed and implemented. The seven elements of this program are listed below:

- Program definition;
- Emergency Preparedness drills and exercises;
- Commitment tracking, including transition of action item tracking system into PIMS (Plant Information Monitoring System);
- Medical emergency responses at Peach Bottom and Limerick, and the accountability/evacuation process at Limerick;
- Emergency Response Organization (ERO) training and qualification;
- Development of a "world class" emergency preparedness program at PECo;
- Management support of emergency preparedness initiatives.

Each of these elements were subdivided into a number of specific objectives. An Action Plan was developed to track the progress of the Improvement Plan. At the time of this inspection, the Plan was 70% completed.

Management, from the Board of Directors through first-line supervision, is involved in improving and maintaining EPP effectiveness. Emergency preparedness concerns were called to the attention of shareholders in a brief statement on Page 10 of the 1989 Annual Report. The Nuclear Committee of the Board of Directors on a number of occasions looked into emergency preparedness activities. The Chairman of the Board of Directors signed an Official Bulletin, Serial Number 2153 "General Instructions, Corporate Nuclear Emergency Preparedness Policies." The Bulletin was addressed to all employees and states PECo's policy

of being fully prepared for emergencies through implementation of the Emergency Plan and Implementing Procedures. The Senior Vice President, Nuclear Group issued a series of policy statements stating policy intent, applicability, implementation and sources. Administrative Procedures list responsibilities and accountabilities of the EPP staff. Functions and responsibilities of the ERO staff are defined in the Emergency Plan. Program and personnel performance indicators have been developed which are tracked and brought to the attention of the Senior Vice President Nuclear Group. ERO responsibilities are elements in an employee's annual appraisal. Selection Managers identify candidates for the ERO and are responsible for their ERO qualification and annual requalification.

Progress of the Improvement Plan and EPP activities are reviewed and tracked regularly at six levels of management. The Nuclear Group Senior Vice President discussed EP at the monthly Station Review meetings and monthly EP meeting with the Divisional Vice President Nuclear Support. Department Vice Presidents review EP objectives weekly during routine staff meetings and on a one-on-one meeting basis. Divisional Managers also hold weekly EP review meetings in addition to discussion of EP at staff and status meetings. The EP section manager holds weekly or more frequent meetings, while EP Branch leads track EP status on an on-going basis.

Based on this information, the inspector concluded an organizational structure has been developed which accommodates EP, policies are clearly stated and distributed to all staff, frequent review meetings are held at monitor performance and employees are held accountable.

Based on the above review, this portion of the licensee's emergency preparedness program is acceptable.

3.6 Security Emergency Preparedness Interface

To determine if nuclear security officers (NSOs) are trained in EP responsibilities, the inspector reviewed training records, interviewed personnel and inspected the Central Alarm Station (CAS). NSO's are radiation worker qualified as well as respirator trained and fitted. These officers have also been trained in search, rescue and accountability. EP security drills have not been held and there is no formal EP security interface. All security related reports to the NRC go via the control room. NSO's questioned were not aware of radiation based CAS evacuation criteria. There are no CAS area radiation monitors. NSO's did not know who would tell them to evacuate, nor could they identify the fall-back position. Upon hearing of this, the licensee agreed to take immediate corrective action.

Based on the above, and with the exception of CAS evacuation, this portion of the licensee's emergency plan is acceptable.

3.7 Off-Site Activities

The licensee is required to provide offsite support. Standards are given in 10 CFR 50.47(b)(5) and (b)(15). Related requirements are stated in Sections IV.D.2 and D.3 and IV.F of Appendix E to 10 CFR 50. Documentation relating to licensee offsite support activity was reviewed to ascertain if standards and requirements were met.

Offsite activities involve sixty governmental entities. Responsibility for this is assigned to the Emergency Preparedness Program. A contractor trained over 1700 Emergency Planning Zone (EPZ) emergency workers. Training modules have been developed including those for table tops and team training. Public Information Brochures were distributed to all households, school districts and institutions in the EPZ. Inserts, intended for transients, appear in eight telephone directories. Quarterly coordination meetings and monthly interface meetings are held with the Commonwealth and Counties. Two or three meetings a year are also held with each of 44 local governments and districts. The sirens are tested monthly; availability for last year was 99.4%. Emergency Action Levels and PARs were reviewed with government and copies of the 10 CFR 50 audit/review was sent to them.

Based on the above review, this portion of the licensee's emergency preparedness program is acceptable.

4.0 Exit Meeting

An exit meeting was held with licensee personnel identified in Section 1 of this report on August 31, 1990. The inspector presented the results of the inspection and advised the licensee that no violations or deviations were identified. Licensee management acknowledged these findings and indicated they would evaluate them and take appropriate corrective action regarding the items identified.

REGION I OPEN ITEM INPUT FORM
(FORM 6)

| | Check if changed since Exit Meeting

Supry. Review G

Docket/Plant 50/354 50/355 Report No. 90-21/90-20 Input Date 11/15/90

A. Add New Items: Originator: _____

Item No.	Type	Resp. Sec	Remarks
___	_____	_____	_____
___	_____	_____	_____
___	_____	_____	_____
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B. Modify/Update:

Item No.	Type	Resp. Sec	Remarks
___-_____-___	_____	_____	_____
___-_____-___	_____	_____	_____
___-_____-___	_____	_____	_____

C. Close:

Item No.	Closing Remarks	Item No.	Closing Remarks
89-11/12-02	_____	___-_____-___	_____
89-11/13-01	_____	___-_____-___	_____
___-_____-___	_____	___-_____-___	_____

TSS 1/90