

U. S. Nuclear Regulatory Commission
Region I

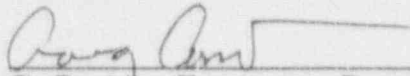
Docket/Report: 50-277/92-03, 50-278/92-03, 50-352/92-05, 50-353/92-04

License: DPR-44, DPR-56, NPF-39, NPF-85

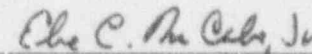
Licensee: Philadelphia Electric Company
Nuclear Group Headquarters
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Wayne, Pennsylvania 19087-0195

Facility: Peach Bottom Atomic Power Station, Units 2 and 3
Limerick Generating Station, Units 1 and 2

Dates: January 6 to April 8, 1992

Inspectors: 
C. Conklin, Emergency Preparedness Specialist 5/13/92
date

J. Lusher, Emergency Preparedness Specialist
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Approved: 
E. McCabe, Chief, Emergency Preparedness 5/12/92
Section, Division of Radiation Safety and date
Safeguards

Areas Inspected: An announced emergency preparedness inspection was conducted at the Peach Bottom and Limerick stations and Chesterbrook. The inspection areas included: changes to the emergency preparedness program; emergency facilities, equipment, instrumentation, and supplies; organization and management control; training; and independent reviews/ audits.

Results: The Emergency Preparedness program was being effectively implemented. Strengths were noted in implementation of the combined Peach Bottom/Limerick Emergency Operations Facility and Emergency News Center, quality and depth of off-site support, and quality and depth of the training program.

DETAILS

1. Persons Contacted

During the inspection, the following persons were briefed on preliminary findings.

C. Adams, Manager - Emergency Preparedness, Chesterbrook (CB)
R. Costagliola, Manager - Support Division, Limerick Generating Station (LGS)
R. Brown, Site Emergency Preparedness Supervisor, LGS
R. Smith, Auditor, LGS
G. Leitch, Vice President, LGS
V. Cwietniewicz, Superintendent Training, LGS
G. Madsen, Regulatory Engineer, LGS
R. Mandik, Branch Lead, CB
R. Boyce, Superintendent Maintenance and I&C, LGS
A. Daugherty, Site Emergency Preparedness Supervisor, Peach Bottom (PB)
D. LeQuia, Superintendent - Plant Services, PB
G. Daibeler, Manager - Support Division, PB
R. Kankas, Superintendent - Business Unit, PB
W. Eckman, Nuclear Quality Assurance, PB
R. Bernhardt, Emergency Preparedness Training, PB
S. Maingi, Nuclear Engineer, Pennsylvania Bureau of Radiation Protection
D. Helwig, Vice President, Nuclear Engineering and Services, CB

The inspectors also interviewed and observed the actions of other licensee personnel.

2. Operational Status of the Emergency Preparedness Program

This inspection report details the implementation of the common Emergency Operations Facility (EOF) and Emergency News Center (ENC) for Peach Bottom and Limerick. The EOF/ENC, located in Coatesville, was organizationally assigned to the licensee's Chesterbrook office. Due to the overlap of responsibilities, particularly regarding common procedures, staffing and training, this report addresses the emergency preparedness program as a single entity. All portions of the program common to both sites are described under the Chesterbrook section, while those portions of the program unique to each station are described under the Peach Bottom and Limerick sections.

2.1 Emergency Plan and Implementing Procedures

Chesterbrook

Nuclear Group Policy NP-EP-1, Emergency Preparedness, Revision 0, dated 10/14/91 set the corporate policy to establish and maintain the Emergency Preparedness Program. Nuclear Group Directive ND-EP-1 (Previously Nuclear Group

Administrative Procedure NA-01E007, Emergency Preparedness Program), Nuclear Emergency Preparedness Program, Revision 0, dated 2/7/92 delineated the major responsibilities to establish and maintain the emergency preparedness program. This directive's responsibility matrix outlined normal positions versus program elements such as emergency plan and implementing procedures, emergency response organization, drills and exercises and emergency response facilities. This detailed directive assigned responsibilities both within and without the nuclear group.

Nuclear Group Administrative Procedures (NGAPs) were currently being phased out. They were being replaced with Common Nuclear Procedures (CNP) to better reflect the new corporate stance regarding emergency preparedness. These CNPs were being approved by a combined meeting of PORC for both Peach Bottom and Limerick. Combined PORC meetings were taking place one or two times per month. One NGAP has been converted to a CNP and retired. All other NGAPs were scheduled to be converted by August 1, 1992.

The inspectors reviewed procedures for the common EOF and ENC. These procedures were properly prepared, reviewed and approved.

Based on the above, effective program implementation was found in this area.

Peach Bottom

NGAP 01E001, Development and Maintenance of Emergency Plan and Implementing Procedures, Revision 0, dated 10/1/90 established the responsibilities and authorities for preparation, control and documentation of revisions. This NGAP also established formal 10 CFR 50.59 and 50.54(q) reviews, as well as the approval process, PORC review and approval and Plant Manager approval.

Administrative Procedure A-21, Generation of Emergency Response Procedures (ERPs), Revision 12, dated 4/12/91 provided the specific requirements for revising or generating ERPs, as well as delineating format requirements. All revisions were being reviewed by the Site Emergency Preparedness Supervisor (SEPS) and submitted to PORC for approval. This procedure was being replaced by A-C-21, Preparation of Emergency Response Procedures, Revision 0, dated 4/3/92 to reflect commonality of all station and Chesterbrook (CB) procedures. Procedure A-4, Plant Operation Review Committee, Revision 25, dated 4/22/91 established a formal process for 10 CFR 50.59 and 50.54(q) reviews. A review of selected procedure changes indicated that these reviews were conducted and properly approved. The inspectors noted, however, that ERP-300, Dose Assessment Team Leader (DATL), Revision 3 (not issued at the time it was inspected) specified that the DATL provide Protective Action Recommendation (PAR) determinations to the Emergency Director based on both dose projections and plant conditions. However, the attachment that provides guidance on PARs based on plant conditions was deleted. This information

was incorporated into ERP-101, Classification of Emergencies, but the DATL was not trained on this procedure. The licensee agreed the DATL needs this guidance and will further revise ERP-300. The inspector noted that this revision was accomplished satisfactorily prior to the end of the inspection.

The SEPS conducted a detailed self-assessment of the emergency preparedness program in February, 1992 and presented the findings to station management. That self-assessment was thorough and critical and identified many strengths as well as areas needing further attention. Those areas needing attention included: upgrading the mini-drill program; the formal 10 CFR 50.54(q) process; and, the action item tracking system.

The inspectors also reviewed the document control process. Procedure, A-2, Control of Procedures and Certain Documents, Revision 33, dated 2/28/89 established the responsibilities for issuing, distributing, controlling and maintaining PB controlled documents. The Document Control Center (DCC) maintained a master list of locations and documents at each location. DCC personnel were responsible for physically making the changes to all documents. In addition, DCC personnel performed periodic audits of documents by individuals other than those who made the changes. A certain number of procedures were checked monthly on a random basis with a maximum number of errors allowed. If this number was exceeded two months in a row, a complete audit was conducted. All documents were audited on an annual basis as well. Errors found were corrected within 48 hours by the person responsible for that document. A new procedure recently implemented calls for auditing 10 consecutive procedures in a manual, instead of single procedures, to aid in finding missing procedures. All audit records reviewed were properly completed.

Based on the above, effective program implementation was found in this area.

Limerick

NGAP 01E001, Development and Maintenance of Emergency Plan and Implementing Procedures, Revision 9, dated 10/1/90 established the responsibilities and authorities for preparation, control and documentation of revisions. This NGAP also established formal 10 CFR 50.59 and 50.54(q) reviews, as well as the approval process, PORC review and approval, and Plant Manager approval. Technical Specification Section 6.5.3, Program/Procedure Review and Approval, established the method to be employed for document revision and approval. Procedure A-4-2, Station Qualified Reviewer Process (SQRP), Revision 1, dated 8/8/91 established the formal station program to review and approve procedure revisions. For emergency preparedness this procedure designated a reviewer, the SEPC, to perform both the 10 CFR 50.59 and 50.54(q) reviews and designated the approval authority, the cognizant superintendent and the plant manager. A summary of the changes was sent to PORC after change implementation. This practice was not consistent with

the NGAP which stated that PORC reviews all changes prior to implementation. A further review indicated that all plan changes and substantive procedure changes did receive PORC review and approval prior to implementation. Changes which went to PORC after approval and implementation were determined to have no adverse safety significance. The licensee indicated that this NGAP was in the process of being revised to conform to the station's QR process.

The inspectors also reviewed the document control process. Procedure A-2, Control of Procedures and Certain Documents, Revision 10, dated 12/23/91 established the responsibilities for distribution schedules, duplication, record keeping, maintenance and auditing of controlled documents. The DCC maintained a master list of locations and documents at each location. DCC personnel were responsible for physically making the changes to all documents. In addition, DCC personnel performed periodic audits of documents by individuals other than those who made the changes. A certain number of procedures were checked monthly on a random basis with a maximum number of errors allowed. If this number was exceeded two months in a row, a complete audit was conducted. All documents were audited on an annual basis as well. Errors were corrected immediately and the auditor documented the audit findings. The inspectors noted that one document was not signed off as corrected. The DCC Supervisor corrected this error immediately.

Based on the above, effective program implementation was found in this area.

2.4 Emergency Facilities, Equipment, Instrumentation and Supplies

Chesterbrook

The Common Emergency Operations Facility/Emergency News Center (EOF/ENC), was constructed at 175 North Cain Road, Coatesville, Pennsylvania, 31 miles from Peach Bottom and 28 miles from Limerick. The EOF consisted of a large operations room with adjoining offices for dose assessment, state and federal responders. The operations area of the ENC adjoined the EOF operations room. Additional space was allocated for administrative purposes and document storage, as well as sanitary facilities and a kitchen. The ENC contained a very large media briefing room, a media work area, and various offices for state and federal responders. A satellite dish was available for use during Commonwealth press briefings. A diesel generator was available to provide backup power to the EOF/ENC.

Telecommunications Telecommunications were diversely redundant. Systems in use in the EOF/ENC included: NRC FTS-2000 network; EOF/ENC AT&T Definity G-1 PBX; Limerick AT&T Dimension Prelude Site Emergency PBX; Peach Bottom GTE Omni-S1 Site Emergency PBX; PECO Backbone Microwave System; PECO Corporate T-1 Network; the Dose Assessment Field Survey Radio System; and Coatesville Central Office (CO) Services. Specific descriptions follow.

1. NRC FTS-2000 - NRC provided telecommunication links were located in the EOF and telephones were located in both NRC areas and in the Operations Room.
2. EOF/ENC AT&T Definity G-1 PBX - A commercially available digital telephone switch configured to provide communications to the Coatesville CO and to Peach Bottom, Limerick and Chesterbrook via tie trunk lines. The G-1 PBX was configured with an eight-hour uninterruptible power supply (UPS) backed up by the EOF/ENC diesel generator. Additionally, the G-1 PBX had a power failure capability that provided dial tone to 40 telephones in the EOF/ENC, 20 from the Coatesville CO and 20 from the Main Office Centrex from the Pennypacker CO via the PECO Microwave Backbone.
3. Limerick AT&T Dimension Prelude Site Emergency PBX - A commercially available telephone switch located at Limerick. Prelude Off Premise Extensions (OPX) were available in the EOF/ENC using dedicated microwave voice channels. These OPXs bypassed the EOF/ENC G-1 PBX and were terminated on analog telephone instruments throughout the EOF/ENC. The Prelude had a 15 minute UPS backed up by a diesel generator.
4. Peach Bottom GTE Omni-S1 Site Emergency PBX - A commercially available telephone switch located at Peach Bottom. Omni-S1 OPXs were available in the EOF/ENC using dedicated microwave voice channels. These OPXs bypassed the EOF/ENC G-1 PBX and were terminated on analog telephone instruments throughout the EOF/ENC. The Omni-S1 had an eight-hour UPS backed up by a diesel generator.
5. PECO Backbone Microwave System - An analog microwave system that provided both voice and data transmissions between PECO locations. The backbone was extended to the EOF/ENC from the Coatesville Microwave Station via a cable maintained by Bell of Pennsylvania. The Microwave System was used to extend the Omni-S1 and Prelude OPXs to the EOF/ENC, as well as voice trunks between the EOF/ENC and Peach Bottom and Limerick. Foreign exchange stations from the PECO Main Office Centrex were also provided via the Microwave System. The entire Microwave System was provided with an eight-hour battery backup.
6. PECO Corporate T-1 Network - A private digital network that provided dedicated voice and data communications between major PECO locations. The T-1 at the EOF/ENC was tied to Peach Bottom, Limerick and Chesterbrook by leased lines that used diverse paths. If any leased line became unavailable, traffic was automatically rerouted through another available leased line. The T-1 was the primary system for the transmission of plant data between Peach Bottom, Limerick, and the EOF/ENC. The T-1 was

provided with a UPS consisting of an eight-hour battery backup and inverter. The UPS was backed up by a diesel generator.

7. Dose Assessment Field Survey Radio System - A system extended from both Peach Bottom and Limerick to the EOF/ENC and used to communicate with field survey teams. Three diverse paths were established to ensure communications would not be lost. These paths were the T-1 Network, the Microwave System and the Radio transceiver. The radio console at the EOF/ENC was capable of selecting any of these paths.
8. Coatesville CO services - A variety of CO services were provided through the Coatesville CO including: 24 direct inward dialing (DID) trunks to the Definity G-1 PBX; 24 dial "nine" DID trunks from the EOF/ENC Definity G-1 PBX; 5 two-way business lines connected to the EOF/ENC Definity G-1 PBX; and 25 two-way business lines for the Media Work Area in the ENC. The Coatesville CO was provided with eight hours of battery backup and a diesel generator.

The inspectors observed a demonstration of these communication links. All worked as designed. In addition, the inspectors observed several drills. Response staff demonstrated the use of these communications links and they also all worked as designed. The inspectors concluded that the licensee has installed several communications systems in the EOF/ENC, with a wide range of diversity and redundancy, and that these systems provided a reliable communications capability for the EOF/ENC.

Emergency Preparedness Data System (EPDS) - EPDS provided information for management during an accident. EPDS, which was computer based, acquired, stored and re-packaged data. For Peach Bottom, data was acquired from the Plant Monitoring System (PMS). For Limerick, data was acquired from the Emergency Response Facility Data System (ERFDS) for Unit 1, from the PMS for Unit 2 and from the Radiological Meteorological Monitoring System (RMMS). All systems acquired data in real time. In addition, EPDS was capable of receiving information from both Peach Bottom and Limerick simulators and could be used for drills and exercises. EPDS was accessed via four computers in the EOF Operations Room. Each computer had a hard copy capability. In addition, displays could be projected on three overhead screens. This allowed all personnel in the EOF, as well as the Operations Room in the ENC, clear, unobstructed access to real time plant data. In the event of a failure of the projection system, status boards were also available. Data was updated every 30 seconds and stored for 24 hours. In addition to real time monitoring, a playback mode allowed the user to review data stored during the previous 24-hour period. EPDS also allowed the user to trend selected parameters. The several data displays available included: Plant Overview (each screen was unique to the selected unit); Plant Summary; Reactivity Control; Reactor Parameters;

Torus/Drywell; Containment; Radiological Parameters ARMS Status; Power Supplies; Meteorological Data; and Plant Parameter Status and Trends. The displays were also color coded to facilitate rapid determination of the validity of the displayed data.

The inspectors observed EPDS operation from Peach Bottom and Limerick, using real time plant data as well as simulator input. In addition, the inspectors observed the performance of licensee staff during several drills. In all cases, EPDS worked as designed. EPDS was appraised as a highly effective, state-of-the-art system that greatly enhanced the ability to evaluate accident conditions.

Dose Assessment

The PECO Common Dose Model (CDM) was based on MESOREM Jr. The CDM was an enhanced version of the model that had been utilized at the Peach Bottom Atomic Power Station (PBAPS). CDM replaced manual calculations as a backup to RMMS for emergency dose assessment at the Limerick Generating Station (LGS) Control Room and Technical Support Center (TSC). CDM was utilized as the primary dose assessment methodology in the PBAPS Control Room and TSC on PCs with battery back-ups. EOF dose assessment personnel were to use the CDM only. The CDM ran on PCs with battery back-ups.

A 10 CFR 50.54(q) review for LGS dated 2/12/92 determined that there was no reduction in the effectiveness of the Emergency Plan. The change in dose assessment capabilities will require a plan change to Section 6 and was expected to be completed in March 1992.

The most notable enhancements in dose assessment for PBAPS were:

- ingestion dose rate calculations to 50 miles in Mode A,
- calculation of I-131 concentrations and MPC/hrs in Mode B,
- back calculations of noble gas and Iodine source term from field measurements or isotopic analyses,
- point source calculations using actual wind speeds,
- use of containment radiation monitors to estimate source term,
- default release duration is now four hours,
- terrain modeling for Mode A,
- an option to input meteorological data every 15 minutes or one hour.

The most notable changes in dose assessment capabilities for LGS were:

- release typing for either a ground level or elevated plume with no mixed-mode as in RMMS,
- improved Mode B calculational methodology,
- consideration of daughter in-growth,

- ingestion dose rate calculations to 30 miles in Mode A,
- back calculations of noble gas and Iodine source term from field measurements or isotopic analyses and unmonitored release capability,
- calculation of MPC-hrs for field teams,
- isotopic sample decay based upon time after reactor scram,
- calculation of dry deposition based upon deposition velocity,
- use of containment radiation monitors to estimate source term,
- calculation of PARs based on a dose savings determination,
- improvements in terrain modeling,
- inclusion of additional iodine radioisotopes.

The inspectors reviewed the CDM verification process. The licensee's test plan was extensive. The code was incorporated into their Software Quality Assurance System.

Facility Maintenance - The facilities were maintained by Facilities Support. Both weekly and monthly test surveillances were performed on the EOF/FNC. These surveillances were provided to the Emergency Preparedness Manager for review. In addition to the normal maintenance and housekeeping activities, contracts were in place for continuing battery and diesel generator maintenance. All annual and recurring work items were tracked on a computer based Recurring Work Order System maintained in Chesterbrook. This system was very detailed. It generated tasks orders required to be approved by the individual and supervisor, as well as by the Emergency Preparedness Manager. Chesterbrook personnel were in the process of transferring information from this system to PIMS for standardization. This was scheduled for completion by June, 1992.

Based on the above, effective program implementation was found in this area.

Peach Bottom

NGAP NA-01E003, Emergency Response Facilities/Equipment, Revision 0, dated 10/1/90 established the responsibilities for control and maintenance of emergency response facilities (ERFs), types of equipment, and distribution and control of Emergency Response Organization (ERO). Peach Bottom has also developed surveillance test procedures (ST-EPPs) to address the ERF maintenance aspects of the program. These ST-EPPs were grouped by function such as drills and tests for reviews. Upon review of completed ST-EPPs, the inspectors noted that some inventories for local hospitals documented inventory shortages. The reason was that an agreement had been made with the hospitals that shelf life items, such as magnesium sulfate and lidocaine, would not be included in the inventory, but instead would be taken from the hospital pharmaceutical supply as needed. That agreement was made prior to the revising of the ST-EPP inventory forms and the rationale was to eliminate constant replacement of expired material. At the time of the inspection, the new ST-EPP had been approved by PORC, but not yet implemented. All other

ST-EPPs were properly completed. The inspectors toured all onsite ERFs and they were found as described in the emergency plan. All equipment tested worked properly.

Based on the above, effective program implementation was found in this area.

Limerick

NGAP NA-01E003, Emergency Response Facilities/Equipment, Revision 0, dated 10/1/90 established the responsibilities for control and maintenance of emergency response facilities (ERFs), types of equipment, and administration of the Emergency Response Organization (ERO). Limerick had also developed ST-EPPs to address ERF maintenance. These ST-EPPs were grouped by department and included: emergency equipment; ERF ventilation; and communication systems. The inspectors toured all onsite ERFs and they were found to be as described in the emergency plan. All equipment tested worked properly. In addition, the TSC ventilation system was tested. The on-shift I&C technician responsible for activating the system was able to start the system and verify correct operation. Selected ST-EPPs, both monthly and quarterly, were reviewed. All were found to be properly completed and approved. Exceptions were properly identified and were corrected. The inspectors noted that Health Physics utilized a specialized matrix to ensure that all instrumentation at off-site locations was properly calibrated. This matrix was especially noteworthy.

Based on the above, effective program implementation was found in this area.

2.3 Organization and Management Control

Chesterbrook

Emergency Preparedness (EP) was the combined responsibility of the corporate, Peach Bottom and Limerick EP groups. The Emergency Preparedness Manager (EPM) reported, through the Nuclear Support Manager, to the Vice President Engineering and Services. Chesterbrook was responsible for all offsite training, siren system maintenance, integrated drills and annual exercises, maintenance of the EOF/ENC, and providing support to the Peach Bottom and Limerick sites. Corporate was staffed with 14 individuals with only one vacancy. Staffing has been stable. Staff expertise included engineering, health physics, operations and clerical.

NGAP NA-01E004, Designation, Training and Maintenance of the Nuclear Emergency Response Organization (ERO), Revision 0, dated 12/14/90 established the responsibilities for ERO selection. The Vice President Engineering and Services designated the selection managers. Selection managers were responsible for designating ERO personnel and ensuring they were qualified, trained and available

for drills. The NGAP also captured a formal mechanism to report on the movement of personnel. The Vice President, on 9/13/91, issued a memorandum that established the selection managers as well as the personnel for the ERO. The ERO staffing goal was three deep. Most positions were staffed four deep. In order to ensure all ERO members were qualified, the EPM conducted a monthly review.

Based upon the above, effective program implementation was found in this area.

Peach Bottom

Emergency Preparedness (EP) was the combined responsibility of the corporate, Peach Bottom and Limerick EP groups. The SEPS reported, through the Support Manager, to the Site Vice President. The SEPS was responsible for all onsite maintenance, surveillance, communications, facilities, mini-drills and Emergency Plan and Implementing Procedure revisions. The SEPs had a staff of three which included licensed senior reactor operator, health physics, and clerical expertise. An additional position had been approved but not yet filled. Except for a change in the SEPS, staffing had been stable. The SEPS changed on February 1, 1992. The new SEPS had several years experience in the corporate EP group with the drill and exercise program and the corrective action program. In addition, the SEPS recently completed a 15-month tour with INPO in their EP group.

ERO responsibilities were as described in NGAP NA-01E004 above, with the following differences for Peach Bottom. The Site Vice President issued a 3/14/91 memo to all selection managers assigning them responsibility for ERO personnel selection. The ERO was currently staffed four deep. The ERO was updated quarterly utilizing PIMS, though there was no formal mechanism for this task. The SEPS indicated that a formal procedure was under development. The SEPS recently sent a PIMS printout of the ERO to all selection managers for verification and to assist in scheduling training. In addition, the SEPS maintained a yearly and weekly on-call schedule for all ERO group/team leaders and managers. ERO members were required to wear pagers during their on-call week and were responsible for contacting SEPS if weekly schedule changes were required. Emergency Response Procedures were sent to PORC to capture ERO name changes. A change to Procedure A-C-21, Generation of EP Procedures, was scheduled to be implemented on 4/3/91 to allow name and telephone number changes to be made and distributed without being sent to PORC. That should improve ERO roster change timeliness.

Based on the above, effective program implementation was found in this area.

Limerick

Emergency Preparedness (EP) was the combined responsibility of the corporate, Peach Bottom and Limerick EP groups. The SEPS reported through the Support

Manager to the Site Vice President. The SEPS was responsible for all onsite maintenance, surveillance, communications, facilities, mini-drills and Emergency Plan and Implementing Procedure revisions. The SEPs had a staff of four which included senior reactor operator and health physics expertise, as well as clerical support. That staff had been stable.

ERO responsibilities were as described in NGAP NA-01E004 above with the following differences for Limerick. The Site Vice President issued a matrix, dated 7/24/91, which established selection manager assignments and included the selection criteria for each ERO position. The ERO goal was to be staffed three deep, but most positions were staffed four deep. In order to ensure all ERO members were qualified, the SEPS conducted a monthly review. RT-7-EPP-480-0, ERO Qualification Status, Revision 0, dated 4/7/91 outlined the formal process to ascertain qualification status. A printout from PIMS was generated and this report identified individuals who were delinquent, 30 to 60 and 60 to 90 days from qualification expiration. This report was used to schedule training and to task selection managers to require personnel to attend the training.

Based on the above, effective program implementation was found in this area.

2.4 Training

Training for positions at Peach Bottom and Limerick was the responsibility of the stations. Training for positions at the EOF/ENC was the responsibility of Chesterbrook.

Chesterbrook

Program Plan: Emergency Preparedness Training, Revision 1, dated 4/1/92 described the basic training program for the ERO. It outlined the selection process, which can be either selection or progression; described practical training measures, initial and re-qualification training, and the qualification card process; and delineated the process from selection to inclusion in the ERO, and for maintaining the ERO. Lesson Plans were divided into four types: classroom; on-time qualifications; drills and exercises; and mini-drills. Classroom and mini-drill performance were required annually, exercise/drill performance was required tri-annually and the qualification card process was one time only. All lesson plans reviewed were current and reviewed by the EPM and properly approved. Lesson plans were reviewed and revised as necessary annually. All training records were kept on PIMS. PIMS had several screens to facilitate training including a job/access printout that described the ERO position, required lesson plans and periodicity, as well as personnel records. The PIMS was easy to use and fully supported the training department. All ERO members were currently trained. Training was conducted throughout the year.

Peach Bottom

EPP-0000, Emergency Preparedness Training Program Plan, Revision 0, dated 4/1/90 and TP-320, Course Plan, Revision 1, dated 4/23/91 described the basic training program for the ERO. These documents identified ERO positions by job access codes and described the required training sessions needed for each session. ERO qualification was tracked by PIMS. PIMS printouts listed all ERO personnel by position, required training sessions, qualification and requalification dates, and notations to flag personnel due for requalification. The inspectors noted that the skills qualification for three shift management personnel had lapsed. Two were apparently five weeks overdue and one was two months overdue, but they continued to be listed as ERO members. Further review revealed that these individuals had received the necessary training in license requalification training and in fact were only 9 to 13 days overdue. They had missed their required training sessions due to unexpected obligations. This was assessed as a unique occurrence and not indicative of a serious problem. The SEPS was preparing a new procedure to ensure group coordinators received PIMS printouts to ensure their personnel were scheduled and attended training. Several lesson plans were reviewed by the inspectors and these were current, properly reviewed by the SEPS and approved by management. When there were procedure changes, the SEPS informed training to update the lesson plans. If the revisions required immediate attention, the Program Plan directed the SEPS to note this on the PORC cover sheet so that affected persons would be notified on a "read and sign" basis. The inspectors found that this system was not being utilized. Also, the "read and sign" program stated that it will be employed for major changes. This appeared to be contrary to the typical function of a "read and sign" program, which is for immediate changes, rather than for major ones. No failure to adequately promulgate information was identified, however, and the licensee agreed that the "read and sign" program should be revised.

The inspectors observed the senior emergency preparedness instructor conduct a requalification session for OSC Coordinators and Personnel. This class included the purpose of the ERO, event classification, emergency planning zones, and the ERFs. The instructor covered all objectives and effectively conveyed the material to the trainees.

To ascertain the effectiveness of training, the inspectors conducted several walk-through scenarios. The walk-throughs were done with two operating crews, each consisting of a shift manager, shift supervisor and a shift engineer. Each shift received the same scenarios. The first scenario consisted of a small break loss of coolant accident which rapidly degraded, resulting in a General Emergency condition. Both crews correctly recognized the postulated conditions and properly declared a General Emergency. Notifications would have been timely and protective action recommendations were conservative. The inspectors did however, note some inconsistencies in ERP-101, Classification of Emergencies. In Table 2, the criterion

for a General Emergency is "Scram condition with Reactor level < -226 ; on the active fuel range level for 3 minutes AND Containment pressure > 20 psig." The title for this Emergency Action Level (EAL) is "Scram with LOCA and no ECCS." One crew was reluctant to declare the General Emergency with reactor level at -230 " and containment at 25 psig until it was verified that ECCS was lost. The licensee agreed that the intent of this EAL, < -226 " reactor level and > 20 psig containment pressure, indicated that ECCS has been lost and did not need to be verified. They indicated they would address this issue in both the procedure and training. The second scenario was a fuel failure with a main steam line break and inability to close both "A" main steam line MSIVs. Due to maintenance, a pump pit door and turbine building roll-up door were open, resulting in an unmonitored release path. The crews correctly recognized the postulated conditions and properly classified the event. Notification would have been timely. The inspectors did note, however, some problems with the dose assessment computer model used for this scenario. The model assumed the reactor was scrammed and gave a default time after shutdown of one hour. For most of the scenario, the reactor was not scrammed and the shift engineer using the model was not aware he could enter a "0" for time after shutdown. In addition, the postulated scenario resulted in a problem in modeling the source of the release because the field survey result was too close to the plant. The licensee planned to review these areas.

Based upon the above, adequate program implementation was found in this area.

Limerick

Section 8.1.1 of the emergency plan 730-EPP, Emergency Preparedness Training, Revision 1, dated 2/10/92 described the basic training program for the ERO. Program/Course Plan: LGS Emergency Preparedness, Version 9101, dated 9/23/91 described the ERO and provided a detailed job description. It outlined the selection process, either by progression or selection; described practical training measures, initial and requalification training, and the qualification card process; and delineated the process from selection to inclusion in the ERO, as well as maintaining the ERO. Lesson plans were divided into four types: classroom; one-time qualification; drills and exercises; and mini-drills. Classroom and mini-drill performance was required annually, exercise and/or drill performance was required tri-annually, and the qualification card process was one-time. All lesson plans reviewed were current, reviewed by the SEPS and properly approved by management. Lesson plans were being reviewed and revised as necessary annually. All training records were kept on PIMS. PIMS had several screens to facilitate training record keeping including a job/access printout that described the ERO position, required lesson plans and periodicity, as well as personnel records. PIMS was easy to use and fully supported the Training Department. All individuals in the ERO were trained. Training was conducted throughout the year.

In order to ascertain the effectiveness of training, the inspectors conducted several walk-through scenarios. The walk-throughs were done with two operating crews, each consisting of a shift manager, senior control room operator, shift technical advisor and shift health physics technician. Each shift received the same scenarios. In addition, walk-throughs were conducted with two Emergency Directors and one Emergency Recovery Manager. One scenario was a fast-breaking event requiring a classification of a General Emergency, and one scenario resulted in a release and on-shift dose assessment. All individuals properly recognized postulated plant conditions and properly classified the events. Notifications would have been timely. Protective action recommendations would have been conservative.

Based on the above, effective program implementation was found in this area.

2.5 Licensee Audits

This section applies to Chesterbrook, Peach Bottom and Limerick as the audit was performed by a single team that addressed emergency preparedness as an integrated program.

The Nuclear Quality Assurance (NQA) department was responsible for conducting the annual emergency preparedness audit. This audit also captured 10 CFR 50.54(t) requirements. Each audit was performed by NQA personnel from Chesterbrook, Peach Bottom and Limerick, with the lead auditor rotating between Peach Bottom and Limerick. Peach Bottom was the lead for this audit.

The 1991 NQA audit, A0005488, was performed by five NQA personnel with technical assistance from a contractor for the 10 CFR 50.54(t) aspects. The audit was conducted from 9/23/91 to 10/25/91 and included a review of records, personnel interviews, practicals, and observation of an integrated drill. The audit plan was properly approved prior to the audit and the actual audit was conducted utilizing a very thorough and detailed checklist. The audit report, dated 12/9/91, outlined several program strengths, such as the new EOF/ENC, ERO training and self assessments. It also resulted in eight Corrective Action Requests (CARs). None of the CARs had any adverse safety significance. The audit report properly addressed the 10 CFR 50.54(t) interfaces. The inspectors noted that the consultant did not provide an audit plan or checklist. Subsequently, the lead auditor did provide the audit plan and checklist. The audit report received extensive distribution to management, as well as to the Nuclear Review Board. The results of the audit were properly distributed to the state and local agencies for both stations on 2/7/92.

The inspectors also reviewed the licensee system to track corrective actions. NGAP NA-01E002, Emergency Preparedness Action Item Tracking System, Revision 0, dated 9/24/90 described the responsibilities for utilizing this system. PIMS was used for Chesterbrook and both stations. The SEPS were responsible for entering all

action items identified from drills, self assessments, etc. NQA entered items identified in audits, and Licensing entered items identified in inspection reports. The SEPS could enter PIMS at any time and update the status of items, as well as make hard copies. In addition, Limerick issued the Limerick Tracking Report every two weeks. This report was distributed to management and affected departments and contained a list of all open items, their status, due dates, and noted if they were overdue or within two weeks of the due date. The inspectors noted that all times were properly entered in PIMS. There were few open items for Chesterbrook, Peach Bottom or Limerick. The inspectors noted that the SEPS was also charged with reviewing previous open items to evaluate the effectiveness of corrective actions.

Based on the above, effective program implementation was found in this area.

2.6 Drills and Exercises

Chesterbrook

NGAP-NA-01E909, Preparation and Conduct of Emergency Response Drills and Exercises, Revision 0, dated 10/1/90 delineated all responsibilities and activities necessary to prepare, conduct and evaluate integrated drills and exercises. Chesterbrook staff maintained a data base for objectives on a six year basis that showed when they were last done and were next due. They also kept a matrix of objectives versus the annual drills scheduled. A newly developed matrix allowed staff to track EALs used, types of core damage depicted and release paths used in order to aid in the identification of needs in future drills and exercises.

For Peach Bottom, drill dates were selected by Chesterbrook and approved by PORC. Dates could be modified as necessary. ERO members were required to play in one drill/exercise every three years. Two practice drills, one rehearsal drill and the annual exercise were scheduled each year. For Limerick, drill dates were selected by Chesterbrook and approved by the site Vice President. Dates could be modified as necessary. ERO members were required to play in one drill/exercise every three years. One practice drill, one rehearsal drill and the annual exercise were scheduled each year. One additional practice drill was scheduled for 1992.

Drill/exercise reports were well written, complete and self-critical. The reports were formatted by facility and addressed strengths, weaknesses, areas for improvement and recommendations for corrective action. All reports were approved by the Drill Coordinator, EP Branch Lead, SEPS and EPM, and received wide distribution to both site and corporate management. The inspectors noted that three reports for Peach Bottom were issued late (3 to 4 months after the drills were conducted). This was recognized by the licensee and corrected as documented in a memo to the site Vice President dated 11/25/91. All Limerick reports were issued in a timely manner.

In addition, the inspectors observed several drills in the EOF/ENC. These drills were driven from both Limerick and Peach Bottom. Both utilized the simulator to drive EPDS data. All equipment and facilities worked as required during the drills. In addition, the inspectors observed an unannounced, after hours call out drill. This drill resulted in the activation of the EOF/ENC in one hour.

Based on the above, effective program implementation was found in this area.

Peach Bottom

The SEPS was responsible for all onsite mini-drills. This process has been informal and there was no written guidance. These sessions were not well documented so the inspectors could not ascertain how many drills were conducted, what was covered or the dates of the drills. The SEPS had recognized this problem with the mini-drill program and was developing a procedure to formalize the process. This was being tracked as a licensee action item and was scheduled for completion in July, 1992. This corrective action was found to be acceptable, and this area will be reviewed in a subsequent NRC routine EP inspection.

Limerick

The SEPS was responsible for all onsite mini-drills. In addition to practical and walk-through training, ERO members were required to participate in one mini-drill each year. Mini-drills were held for: First Aid; TSC, OSC and EOF operations (Chesterbrook will be responsible for EOF mini-drills in the common EOF/ENC); Data Collection; Field Surveys; Accountability; and Augmentation. All drills were documented on either ST or RT forms. Critique comments were noted and appropriate corrective actions were taken. All records were maintained on PIMS. Over 50 mini-drills were conducted in 1991.

Based on the above, effective program implementation was found in this area.

3.0 Exit

The inspectors met with the persons listed in Detail 1 to discuss the inspection results.