U. S. NUCLEAR REGULATORY COMMISSION

REGION I

Docket Nos.	50-387, 50-388
Report Nos.	50-387, 50-388/97-08
License Nos.	NPF-14, NPF-22
Licensee:	Pennsylvania Power and Light company
Facility:	Susquehanna Steam Electric Station
Dates:	October 27 - October 30, 1997
Inspectors:	J. Lusher, Emergency Preparedness Specialist, Region I W. Maier, Emergency Preparedness Specialist, Region I E. King, Security Specialist, Region I P. Frechette, Security Specialist, Region I K. Jenison, Senior Resident Inspector, SSES
Approved by:	Michael C. Modes, Chief Emergency Preparedness and Safeguards Branch Division of Reactor Safety

EXECUTIVE SUMMARY

Susquehanna Steam Electric Station
Full-participation Emergency Preparedness Exercise Evaluation
October 27-30, 1997
Inspection Report 50-387,388/97-08

Overall performance of the emergency response organization was good.

- Good command and control in all emergency response facilities.
- Good communications throughout the emergency response facilities and with the Commonwealth of Pennsylvania.
- Timely identification and classification of simulated events.
- Timely notifications of events to the emergency response organization, Commonwealth of Pennsylvania, local and Federal organizations.

REPORT DETAILS

P4 Staff Knowledge and Performance

a. Exercise Evaluation Scope

During this inspection, the NRC inspectors observed and evaluated the licensee's biennial full-participation exercise in the simulator control room (SCR), technical support center (TSC), operations support center (OSC), and the emergency operations facility (EOF). The inspectors assessed licensee recognition of abnormal plant conditions, classification of emergency conditions, notification of off-site agencies, development of protective action recommendations, command and control, communications, and the overall implementation of the emergency plan. In addition, the inspectors attended the post-exercise critique to evaluate the licensee's self-assessment of the exercise.

b. Emergency Response Facility Observations and Critique

b.1 Simulator Control Room (SCR)

The Shift Supervisor assumed initial control during the drill scenario. He utilized effective communications with the operators in the simulator and immediately assigned the task of control room communicator. The Shift Supervisor utilized the appropriate Emergency response procedures during the drill. A thorough and conservative decision making approach was utilized during the evaluation of the phosgene gas event because a Site Emergency was considered because of the potential for fumes entering the Diesel Generator rooms.

Appropriate personnel safety measures were established. Local evacuations of the turbine, reactor, diesel and control structure buildings were made due to the potential presence of toxic fumes. However, the Shift Supervisor did not immediately isolate the control room ventilation system. Initiation of control room emergency generating air supply system (CREOASS) was considered but not performed due to the unknown location of the fumes. The simulator operations staff gave good support to the TSC and the EOF with timely updates of plant conditions and data.

The Technical Support team was appropriately staffed and performed the required support functions in accordance with EP procedures. The Teams priorities agreed with the open items listed on the status board in the main TSC area. The engineers were kept well informed of the plant status via periodic team briefings. Tasks were assigned and documented via the status boards, and EOF resources were utilized.

Early in the scenario, the staff discussed the possibility of MSIV leakage through the turbine seals being the cause for the escalated rad levels in the turbine building. This was an accurate assessment. However, the team evaluated many other potential leakage pathways into the turbine building. The staff spent the majority of their time trying to pinpoint the location of the leakage into the turbine building. This resulted in less focus on identifying why there was increased radiation and airborne levels throughout the Reactor Building. Therefore, it was difficult for the team to identify the failed RHR suction relief valve due to the emphasis on finding the migration path into the Turbine Building.

Effective communications were used by the operators in the simulator and the Technical staff in the TSC. These organizations effectively responded to the drill scenario in accordance with their responsibilities. The decision making process was sound and conservative actions were taken in response to the drill scenarios.

b.2 Technical Support Center (TSC)

The TSC was activated 53 minutes after the Alert declaration. This is within the 60-minute time established in the emergency plan. The activation would have been 37 minutes, if there had not been a delay in activating the callout system. The delay was due to the discussion of getting personnel to the TSC because of the potential hazardous materials problem caused by the fire. This discussion was good and took into consideration personnel safety.

The emergency director (ED) maintained good command and control of the TSC. The ED effectively utilized his staff in performing the frequent TSC updates and briefings. Additionally, the ED utilized his staff in evaluating the simulated events as they occurred.

Status boards were maintained and critical data was updated throughout the exercise.

The TSC dose assessment team continuously watched plant radiation monitors on the plant information computer system (PICSY) and was able to identify increasing radiation levels in the turbine building, reactor building, and containment. The Radiation Protection coordinator appropriately placed the on-site monitoring team in the down wind direction so that radiological information pertaining to the release could be determined through field measurements. The field team measurements were then used to calculate the release rate and determine new radiological dose projections and protective action recommendations.

Overall performance in the TSC was good.

b.3 Operations Support Center (OSC)

The OSC was staffed and activated in a timely manner after the Alert declaration. Responding personnel arrived at the OSC within 10 minutes after the declaration was made and a 100% accountability of emergency response personnel was completed in a timely manner. Additionally, the Operations Support Coordinator performed an indepth briefing of the present plant status to personnel waiting in the facility for job assignments.

The Operations Support Coordinator assigned an alternate to assume command and control of the OSC after the TSC was staffed and prepared to assume control of the event. This was done so that the Operations Support Coordinator could work closely with the Damage/Control Coordinator in the TSC. Communications was established between the OSC and TSC so repair and corrective action teams would

be quickly formed when called for in a timely manner. These actions were established prior to the Emergency Director releasing personnel from the assembly areas after accountability was completed.

Prejob briefings were conducted to establish the scope of the assigned tasks using the appropriate procedural adherence, safe travel routes were developed, radiological controls were followed, and communication contacts were utilized. However, the dispatching of the damage and control teams was delayed because of confusion over the plant's radiological conditions. Even though the teams were eventually dispatched, the delays may of had an impact on the licensee's ability to identify the leak paths in a timely manner. Team status was monitored by radio and upon completion of the tasks, post job briefings were conducted and documented. There was good communications between operations and health physic technicians both before and during assigned tasks.

Overall, the OSC response was adequate.

b.4 Emergency Operations Facility (EOF)

Staffing and activation was within ninety minutes of the Site Area Emergency (SAE) declaration. This was in accordance with the Emergency Plan requirements; however, the EOF was not able to assume control of the emergency within 90 minutes of the Alert declaration resulting in the callout of the Nuclear Emergency Response Organization (NERO). Therefore, if the initiating event were a Site Area Emergency, the emergency plan requirements would not have been met. The EOF assumed control of the emergency 116 minutes after the Alert declaration.

The licensee demonstrated the ability to conduct a complete EOF staff relief during the exercise. Oncoming responders did not assume responsibility for their assigned functions until the turnovers were completed. The oncoming Recovery Manager quickly conveyed his expectations to the oncoming staff for a smooth transition.

The Recovery Manager established priorities during the emergency and followed up on their status with his direct reports. The relieving Recovery Manager quickly mobilized his staff to pursue the established priorities.

The EOF staff realized that a radiological release was occurring, but they were never able to properly characterize the pathway of the release. The Engineering Support Supervisor continued to pursue the answer, but he did not clearly articulate his plan of attack for determining this at the Recovery Manager's conferences. Otherwise, the EOF staff was quick to identify changes in plant conditions. The EOF Support Supervisor quickly noted developing trends on the PICSY display, including the occurrence of the reactor scram and the increasing containment radiation levels, which were indicative of increased fuel damage. The Assistant Recovery Manager was able to use the PICSY system effectively to evaluate the feasibility of the early dose projections.

The Recovery Manager's classification of the General Emergency condition was timely and accurate. The EOF notified the offsite authorities of the GE classification accurately and quickly. The protective action recommendation (PAR) was correct and determined with appropriate consideration to the plant conditions and the offsite doses.

The Recovery Manager informed the state emergency director frequently of changing plant conditions, emergency classifications and the PAR. The state Bureau of Radiation Protection engineers attended the Recovery Manager's briefs on a regular basis and contributed to the discussion. The state emergency management agency representative in the EOF kept the Liaison Supervisor and the Recovery Manager informed of the protective action decisions made by the state government.

The inspectors considered the overall licensee performance in the EOF to be very good. Facility activation, although adequate, does not leave much margin for delay. Turnovers between the off going and oncoming responders were thorough. Facility management and control was effective at the EOF. The characterization of the release pathway needs improvement for the type of event occurring in the scenario. The classification, notification and protective action recommendation associated with the General Emergency were timely and accurate. The EOF staff maintained a close working relationship with the state representatives both in face to face and telephonic communications.

Dose Assessment

The EOF dose assessment team members were knowledgeable of their responsibilities and duties. MIDAS information was received from the TSC. Confirmatory MIDAS calculations were performed by the EOF dose assessment staff. Dose projection data was provided to decision makers in the EOF.

Field teams assembled at the EOF, obtained field measurement equipment, and were dispatched. The control of the field teams was accomplished in the EOF, however, some communication problems with the field teams were identified. These problems were resolved by relaying field team instructions, and data, through the TSC.

The EOF staff used field data to do back calculations to help verify source term data from the TSC.

b.5 Media Operations Center

Accurate information, prepared at a technical level that could be easily understood, was provided to the media in a timely manner. The press briefings were well coordinated with offsite officials. One error was made in describing an event, and was corrected by using supplemental information, as well as a correction in the next media briefing. Briefings were held whenever information was required to be updated.

The Media Operations Center is of sufficient size to accommodate a large number of media personnel. The facility contains sufficient communications capability to facilitate media releases.

b.6 Licensee Exercise Critique

The licensee's critique was very comprehensive and thorough. It identified all of the observations identified by the NRC inspection team.

c. Overall Exercise Conclusions

Overall performance of the ERO was good. Simulated events were accurately diagnosed, proper mitigation actions were performed, emergency declarations were timely and accurate, and offsite agencies were notified promptly. No exercise weaknesses, safety concerns, or violations of NRC requirements were observed.

P8 Miscellaneous EP Issues

P8.1 During the emergency preparedness program inspection performed during the week of January 13-16, 1997, the inspector determined that the licensee continued to make changes to the current (NUREG 0654) EALs to meet the NUREG 0654 EAL guidance throughout the period. Identified ambiguities were also reduced through the 10CFR50.54(q) process for emergency plan changes. However, the licensee indicated to the inspector that it is uncertain about whether it will continue to seek NRC approval for the NUMARC NESP007 EALs or update the current EALs.

The NUMARC versus NUREG EAL matter was determined by the inspector, to be tracked as an inspector follow-up item (IFI 50-387, 388/97-01-04) Closed.

The licensee submitted a letter to the NRC April 1, 1997, requesting cancellation of revision to emergency action levels that implemented NUMARC NESP-007.

MANAGEMENT MEETINGS

X.1 Exit Meeting

The inspector presented the inspection results to members of licensee management at the conclusion of the inspection on October 30, 1997. The licensee acknowledged the inspector's findings.

PARTIAL LIST OF PERSONS CONTACTED

Susquehanna Steam Electric Station

G. Kuczynski, Plant Manager
G. Jones, Vice President Nuclear Operations
J. Fritzen, Health Physics Supervisor
C. Smith, Supervisor Nuclear Emergency Planning
R. Halm, Emergency Planning
G. Dressler, Emergency Planning
R. Wehry, Supervisor Engineering - Nuclear Licensing
C. Lopes, Manager, Nuclear Security
R. Breslin, Manager, nuclear Maintenance
M. Rochester, Senior Health Physicist
A. Male, Manager, Nuclear Assessment Services
H. Woodeshick, Special Assistant to the President
W. Damenico, Unit Supervisor
J. Scopelliti, Senior Public Information Specialist
S. Ingram, Senior Health Physicist
D. Leddy, Health Physicist
B. Carson, Health Physicist
E. Horstman, Health Physicist
R. Jensen, Senior Engineer
G. Miller, General Manager, Nuclear Engineering
J. Minneman, Manager, Nuclear Business Improvement
H. Riley, Nuclear, Project Manager
M. Detamore, Project Manager, Nuclear Technology
J. Toresdehl, Consultant
W. Neidermeyer, Consultant

Commonwealth of Pennsylvania

S. Maingi, Bureau of Radiation Protection, Nuclear Engineer

US Nuclear Regulatory Commission

K. Jenison, Senior Resident Inspector
P. Frechette, Security Specialist
E. King, Security Specialist
F. Arner, Systems Engineer

LIST OF INSPECTION PROCEDURES USED

82301: Evaluation of Exercises for Power Reactors
82302: Review of Exercise Objectives and Scenarios for Power Reactors

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Opened
None

Closed

IFI 50-387,388/97-01-04 Completion of corrective action for EAL scheme.

Discussed
None

LIST OF ACRONYMS USED

CREOASS	Control Room Emergency Operations Air Supply System
EAL	Emergency Action Level
ED	Emergency Director
EOF	Emergency Operations Facility
EOP	Emergency Operating Procedure
EP	Emergency Preparedness
ERF	Emergency Response Facility
ERO	Emergency Response Organization
GE	General Emergency
IFI	Inspector Follow-up Item
MIDAS	Meteorological Information Data Acquisition System
MSIV	Main Steam Isolation Valve
NRC	Nuclear Regulatory Commission
OSC	Operations Support Center
PAR	Protective Action Recommendation
PICSY	Plant Information Computer System
RHR	Reactor Heat Removal
SAE	Site Area Emergency
SCR	Simulator Control Room
TSC	Technical Support Center