

JAN. 16 1992

MEMORANDUM FOR: A. R. Blough, Chief  
Projects Branch No. 2  
Division of Reactor Projects

FROM: J. H. Joyner, Chief,  
Facilities Radiological Safety  
and Safeguards Branch  
Division of Radiation Safety and Safeguards

SUBJECT: EMERGENCY PREPAREDNESS SALP INPUT FOR  
ARTIFICIAL ISLAND

Attached for your information is the subject SALP input relating to emergency preparedness at Artificial Island for the SALP period August 16, 1990 through December 31, 1991.

Original Signed By:  
James H. Joyner

James H. Joyner, Chief  
Facilities Radiological Safety  
and Safeguards Branch  
Division of Radiation Safety  
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Attachment: As stated

cc w/encl:  
W. Hehl  
T. Johnson  
J. White  
M. Knapp  
E. McCabe  
J. Laughlin  
C. Gordon

*CG*  
Gordon  
1/15/92

*MC*  
McCabe  
1/16/92

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1/16/92

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## Emergency Preparedness (EP)

### 1. Analysis

During the previous SALP, EP was rated Category 1. That rating was based on strong management involvement, a highly qualified EP staff, prompt resolution of technical issues, and excellent training. PSE&G was very effective in exercise performance and in response to actual events requiring emergency classification.

During this SALP period, the operational status of PSE&G's emergency preparedness program was found superior by NRC review. Management was directly involved in the daily operation of the EP program. Three levels of management provided oversight. Managers at each level were qualified as members of the emergency response organization (ERO), reviewed all changes to the Emergency Plan and Procedures, reviewed drill scenarios, and regularly participated in drills. A thorough audit of the EP program by two independent groups from the Quality Assurance Department identified no deficient program areas. Management also fostered an excellent relationship with State, county, and local governments through numerous meetings and training sessions, and in support of resolving FEMA-identified concerns.

PSE&G was aggressive in handling technical issues. The EP Department effectively maintained emergency response facilities and implemented a number of significant facility improvements. These included the installation of a new callback system for ERO members, completion of the simulator Safety Parameter Display System (SPDS) links to the Technical Support Center (TSC) and Emergency Operations Facility (EOF). Emergency Response Data System (ERDS) installation is in progress. The new emergency news/community center, which is under construction, also represents a significant off-site PSE&G commitment. The Public Alerting System throughout the Emergency Planning Zone (EPZ) was maintained at 98.8% siren availability, exceeding Federal Emergency Management Agency (FEMA) standards.

Operators at Salem and Hope Creek responded to several actual Unusual Events and one Alert during this assessment period. Operators consistently displayed good knowledge and familiarity with emergency action levels contained in the Event Classification Guide (ECG). Events were correctly classified, and timely notification was made to the States and the NRC. All response actions were consistent with Emergency Plan requirements. During the Alert at Salem Unit 2, PSE&G activated the Salem OSC, providing good in-plant support and assistance in response to the turbine-generator failure.

Staffing of the EP program remained strong. The program was maintained by a full time, fully qualified staff of fourteen individuals. The well-balanced mix of disciplines included five senior reactor operators, experienced health physicists, and additional staff with experience in radiological controls and equipment operations. The ERO was also fully staffed, with key managerial positions filled three deep.

EP training was comprehensive, innovative, and thoroughly implemented. Operations and EP personnel training continued to be significantly enhanced through drills on the control room simulator. Training drills for shift operators were conducted weekly at both facilities. The nine additional extensive training exercises conducted during the period tested major portions of the Emergency Plan. Changes and innovations to EP training methodology were constructive in qualifying ERO staff. ERO qualification was kept at a high level, as demonstrated in walkthrough training sessions with ERO members. Off-site training was also a strength, with well-developed training and quality information provided to the States and counties. Training effectiveness was demonstrated by the excellent performance of the ERO during two NRC-observed annual exercises. Both scenarios were very challenging, particularly the 1990 full-participation exercise which involved both plume (10 mile) and ingestion (50 mile) exposure pathways. No weaknesses were identified during this exercise, and only minor areas for improvement were noted. During the 1991 exercise, ERO performance was also effective. An Event Classification Guide inadequacy did, however, cause an exercise weakness involving tardy declaration of a Site Area Emergency.

In summary, PSE&G has maintained a sound and effective EP program with clear management commitment to maintaining a highly professional and qualified staff. The EP site staff was proficient in ensuring readiness for implementation of emergency response activities. The training program was thoroughly defined and effectively implemented with different innovative performance-based techniques. The ERO was well qualified as evidenced by exercise performance. Facilities and equipment were well maintained and upgraded in cases where improvements were needed. Licensee support for local governmental and support organizations was strong.

2. Conclusion

3. Board Recommendation

Artificial Island (Hope Creek and Salem Generating Stations) Proposed SALP Input

SALP PERIOD: May 1, 1989 through July 31, 1990

Emergency Preparedness ( hours; %)

1. Analysis

The Emergency Plan for Artificial Island covers both Hope Creek and Salem Nuclear Generating Stations, therefore the assessment of emergency preparedness is a combined evaluation of both facilities' emergency response capabilities.

During the previous SALP period, this area was rated Category 2. This rating was based on weaknesses identified during a Salem based full-participation exercise, some actual event classification problems, and delays in ensuring that the Salem Technical Support Center could meet NRC design requirements. Strengths noted included a high level of management involvement in emergency preparedness activities, responsiveness to NRC concerns, and an effective emergency preparedness training program.

During this SALP period, two inspections of emergency preparedness activities were conducted, a routine evaluation of the emergency preparedness program, and evaluation of a partial-participation emergency exercise.

Management involvement in emergency preparedness continues to be effective and extensive. Executives and plant managers maintain emergency response organization position qualification, review and approve plan and procedure changes, participate in drills and exercises, resolve audit noncompliance issues, exercise oversight functions, and interface with Delaware and New Jersey State and County government personnel. Management oversight includes a review of call-in test results and emergency preparedness training rescheduling. Management has identified emergency preparedness as a key area of reactor safety. Staff play during drills and exercises is considered a management tool which enables managers to evaluate overall staff attitudes, competency and morale.

Resolution of technical issues continues to be very good and demonstrates a commitment to quality. For example, as a result of an NRC concern, the licensee completed a review of default iodine to noble gas ratios as a function of release pathway, and determined the values were consistent with accident data and emergency off-gas system design and specifications. A four hour, default release duration time has been developed and accepted by the States. User friendly personal computer software has been developed for the back-up dose assessment program. The Technical Support Center ventilation system has been upgraded to meet NRC requirements. Innovative program activities include development of site Emergency Action Levels (EALs) for natural phenomena and security events to replace individual station EALs, a single Event Classification Guide for all three units, and a simplified EAL description for use in the initial contact message sent to the States.

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The licensee has generally been responsive to resolving NRC concerns and has committed to using the Hope Creek and Salem simulators to enhance training effectiveness during emergency exercises beginning in 1990. To enhance the training effectiveness of these facilities, emergency communication systems duplicating those in the control rooms were installed in each simulator. Another example of resolving NRC concerns was apparent in review of the licensee's corrective actions following loss of the NRC Emergency Notification System (ENS) when it was accidentally disconnected from an uninterruptable power supply (UPS) in May 1990. The licensee's communications staff has aggressively pursued upgrading the Salem Telephone Switch Room (location of the ENS UPS connection) and discussed this with NRC's Telecommunication Section. One area not resolved involves the licensee's plans to replace the existing Emergency News Center (ENC) in Salem City, New Jersey with an enlarged, dedicated facility. Although this location is about 8 miles from the site, it is the policy of NRC and FEMA that when new ENCs are constructed they should be located outside the emergency planning zone to lessen concerns of requiring the ENC to be evacuated during an emergency. The licensee is aware of this position, but have not changed the proposed location.

Staffing in the emergency preparedness area is stable with a well-qualified staff available to maintain an effective emergency preparedness program. Personnel with operations backgrounds are on staff who develop demanding operations based scenarios for drills and exercises.

Management's attention to quality was demonstrated by licensee audits and reviews. Independent reviews and audits for each unit were completed by independent audit groups. These audits were carried out in keeping with the licensee's Quality Assurance Procedures which are traceable to the requirements of Appendix B to 10 CFR 50. Among other things, drills were observed and the State/County/licensee interface adequacy was determined. There were no significant findings and the licensee/off-site interface was determined to be adequate. Emergency Department personnel with licensee executives and managers attended almost 100 meetings with State and County personnel. The public alerting system is tested daily, and is well maintained with availability at 99.5%, a value which exceeds Federal Emergency Management Agency standards. Independent and redundant siren activating systems are installed and maintained in each State.

Responsibility for emergency preparedness training has been assigned to the Emergency Preparedness Department. Two qualified emergency preparedness trainers have been transferred from the Nuclear Training Center to the Emergency Preparedness Department to support this effort. Weekly, on-the-job, mini training drills for each site have resumed and nine day-long drills are also scheduled. Over 1,000 licensee personnel have been trained for Emergency Response Organization (ERO) positions. There are at least three personnel qualified for each key ERO decision-making and management position. A dedicated emergency preparedness training facility has been placed in service. Engineers assigned to the Technical Support Center and the Emergency Operations Facility are given an overview of

Emergency Plan Implementing Procedures and Core Damage Assessment Procedures. However, Emergency Operating Procedures are not covered and severe accident analysis training is not given. The NRC has noted the absence of severe accident analysis training of several consecutive years; training in this area would strengthen licensee performance.

The effectiveness of the training program was demonstrated by response to twelve actual conditions requiring classification, and the strong exercise performance. Observations of training drills indicated active involvement from licensed senior reactor operators dedicated to drill scenario development. Operations Support Center and Technical Support Center personnel were observed to implement effective problem identification and resolution.

In summary, the licensee maintains a strong and effective emergency preparedness program. Management remains involved with a demonstrated commitment to quality. Technical issues are generally promptly resolved and appropriate response is given to NRC initiatives. The Emergency Preparedness Program staff is stable and well-qualified to maintain an effective program. Training is well developed and is effective as demonstrated by exercise performance and response to actual conditions requiring classification. A good working relationship is maintained with the States and Counties with regular meetings, and frequent drills.

2. Conclusions

3. Board Recommendations