U.S. NUCLEAR REGULATORY COMMISSION
OFFICE OF INSPECTION AND ENFORCEMENT

REGION III

Reports No. 50-373/81-14; 50-374/81-09

Docket Nos 50-373; 50-374

Licensee: Commonwealth Edison Company
Post Office Box 767
Chicago, IL 60609

Facility Name: LaSalle Nuclear Station

Inspection At: LaSalle Site, Seneca, IL

Inspection Conducted: April 20 - May 1, 1981

Inspectors: M. Phillips — 6/4/81

for J. Pagliaro — 6/9/81

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Inspection Summary

Inspection on April 20 - May 1, 1981 (Reports No. 50-373/81-14; 50-374/81-09)
Areas Inspected: The appraisal of the state of onsite emergency preparedness at the LaSalle Nuclear Station involved seven general areas: Administration of the Emergency Preparedness Program; Emergency Organization; Training; Emergency Facilities and Equipment; Procedures which Implement the Emergency Plan; Coordination With Offsite Agencies; and Exercises and Drills. The inspection involved 680 inspector-hours onsite by six NRC inspectors. No

items of noncompliance or deviation were identified. However, significant deficiencies were identified which must be corrected prior to fuel load. Further, several Open Items were identified which will be examined prior to fuel load.

1.0 ADMINISTRATION OF EMERGENCY PLAN

1.1 Responsibility Assigned

Responsibilities from the Corporate level for emergency planning begin with the Division Vice President, Nuclear Stations, who serves as the Corporate Command Center Director for the Generating Stations Emergency Plan (GSEP). The Radioecology and Emergency Planning Supervisor serves as the Corporate Emergency Planning Coordinator (EPC) and reports to the Division Vice President, Nuclear Stations.

At LaSalle Station, the Administrative and Support Services Assistant Superintendent has the responsibility to coordinate station compliance with the requirements of GSEP and provide a training program to insure knowledgeable performance by assigned personnel.

1.2 Authority

Personnel assigned an emergency function are given authority to perform assigned duties by GSEP in specific tables in the plan. The Shift Engineer serves as the Acting Station Director in the event of an emergency. Training courses are made available initially and at least annually to those assigned emergency responsilities, including participation in exercises and drills.

1.3 Coordination

Coordination of the onsite and offsite organizations and the corporate emergency organization is the responsibility of the Administrative and Support Services Assistant Superintendent.

1.4 Selection and Qualification

Selection criteria for personnel responsible for assigned emergency plan functions are based on the individual's normal responsibilities in the same organization and follow ANSI N18.1.

1.5 Quality Assurance of Emergency Preparedness Program

The corporate and site administration relies on the Quality Assurance organization to supply an up-to-date, distributed emergency plan and implementing procedures that are to be followed by the emergency organization. They require performance in the area of training and training records, exercises and drills, and documentations and implementation of corrections to deficiencies reviewed and considered valid.

The corporate manager of Quality Assurance was interviewed. He outlined the corporate Quality Assurance program and the direction of the station QA program for all activities of Commonwealth Edison Company (CECo). He

clearly understood the requirements of 10 CFR 50.54(t) and outlined how the requirments for independent audits would be met. Concerning technical audits, the licensee indicated that CECo could utilize the resources of other nuclear stations and outside consultants, should the need arise to obtain an adequate audit of a technical area.

The Manager of Quality Assurance for the LaSalle Station outlined his QA program for assuring the quality, consistency, approvals and distribution of the GSEP and Station Emergency Plan Implementing Procedures (LZPs) for the LaSalle emergency plan. The QA program included the review of the following:

- Training and training records.
- The station emergency plan and distribution of changes.
- The calibration of process radiation monitoring systems, effluent monitoring systems, health physics instrumentation, and rad/chem laboratory equipment.

Quality Assurance records indicated that an audit of drills and the December 4, 1980, full-scale exercise was conducted, and deficiencies were identified for correction. QA audits of the emergency plan identified that six agreement letters were outdated. Corrective actions were initiated, with a due date of May 15, 1981.

The program provided a complete audit to insure that corrective actions are implemented and required recourse actions to be taken by the manager QA for items not resolved by the required response date.

1.6 Station Director Interviews (Walk-throughs)

The Station Directors, who have responsiblity for the administration of the emergency plan onsite, were interviewed to determine that an effective leadership and organization structure was in place to deal with emergencies.

The Station Directors were asked to explain how the station and corporate emergency organizations function and how the transition is made from the station emergency organization to the offsite emergency organization.

Their response gave a clear description of the station emergency organization and the responsibility assigned to the principals in the organization. They described the interface of the Corporate Command Center (downtown Chicago) and the Emergency Operations Facility (EOF), and the transition of authority and responsibilities of the managers in each situation. The Station Director has been assigned as an alternate Recovery Manager and has training scheduled to become familiar with the EOF Procedure.

The Station Director is responsibile for the assignment of all station emergency personnel. The GSEP defines their responsibilities and authority.

Based on the findings discussed in Sections 1.1 through 1.6 above, this portion of the licensee's program appears to be acceptable.

2.0 EMERGENCY ORGANIZATION

2.1 Onsite Emergency Organization

The inspector verified that an effective emergency organization was in place by review of the emergency organization and responsibility assignments. These responsibility assignments are summarized as follows and are provided on the attached Organization Chart, shown in Figure 2.1.

Main Responsibilities for GSEP Station Group Directors include:

Station Director

- Supervise and direct the onsite emergency organization.
- Classify emergency conditions and make appropriate notifications.
- Activate Station GSEP Group.
- Establish communications, both onsite and with cognizant offsite.
- Implement emergency plan.
- Maintain records of events.

Operations Director

- Staff OSC and Control Room, and augument as necessary.
- Initiate immediate corrective actions to limit or contain emergency.
- Direct switching and valving operations, and equipment operators.

Technical Director

- Provide technical support to the Station Director.
- Evaluate vital plant parameters during emergency.
- Assist the Rad/Chem Director for onsite radiological matters.
- Assist Operations Director in monitoring all critical parameters.

Maintenance Director

- Direct staff in providing labor, tools and equipment.
- Assist in rescue operations by providing necessary equipment.

Stores Director

- Obtain and deliver to point of need all parts, protective equipment and materials needed in recovery operations.

Administrative Director

- Provide Administrative services.
- Provide food/lodging for station personnel.

Security Director

- Maintain plant security and personnel accountability
- Provide EOF security (when activated).

Rad-Chem Director

- Determine extent and nature of radiological problems onsite and initially offsite until the Environs Director arrives.
- Provide inplant and nearsite Radiation surveys.
- Direct bioassay procedures for onsite personnel.
- Ensure adequate protective measures are in place for onsite personnel.

Several Station Group Directors who are assigned responsibilities in the emergency organization were interviewed to verify that they were aware of their responsibilities and authority.

The following senior Station Group Directors were interviewed: Operations Director, Technical Director, Maintenance Director, Store Director, Administrative Director, Security Director and Rad/Chem Director.

Each of the above staff members were aware of their emergency responsibilities and authority. Each had a working knowledge of the emergency plan and the implementation of the sections for which they are responsible.

Based on the above findings, this portion of the licensee's program appears to be satisfactory, however, the following matter should be considered for improvement:

- The Station Group Directors should be familiar with the EOF procedures, particularly those procedures describing comparable positions in the EOF organization.

2.2 Augmentation of the Emergency Organization

2.2.1 Offsite Emergency Organization

The augmentation of the offsite emergency organization is made by contacting the Corporate Command Center. The Director of the Corporate Command Center (CCC) or designated CCC duty officer activates the

corporate personnel shown in Figure 2.2 for the less serious emergencies such as an Unusual Event or an Alert. When a Site Area or General Emergency is declared, the full offsite recovery organization is dispatched to the nearsite Emergency Operations Facility (EOF) to support the onsite emergency organization. This expanded augmentation is shown in Figure 2.3. The corporate organization provides experienced personnel on a 24 hour per day basis. Supporting contractors are specified in the plan, and written agreements are in effect as reviewed in the licensee's files by the inspector.

2.2.2 Onsite Emergency Organization

The Shift Engineer initially augments the onsite emergency organization by contacting appropriate personnel on the duty call list. During other than normal working hours he notifies the Operations Duty Supervisor to activate the Station Group. Procedure No. IZP-1320-1, "Augmentation of Plant Staffing," lists three other call lists depending on the classification of emergency to notify more personnel, each with a different designated caller. The licensee has not demonstrated through a drill that the minimum augmentation can be accomplished in 30-60 minutes.

Based on the above findings, this portion of the licensee's program appears to be acceptable, however, the following matters should be considered for improvement:

- The duty roster should be expanded to provide better assurance that timely onsite augmentation can be achieved.

- An offshift augmentation drill should be conducted within one year after fuel load.

Note: Section 5.4.1 of this report describes procedural inadequacies relevant to shift augmentation.

3.0 TRAINING/RETRAINING

3.1 Program Established

The inspectors reviewed the onsite training program and discussed utility offered training for offsite support. A training program for initial orientation and annual retraining of onsite personnel is in effect. Each individual employee receives a four day initial orientation and a one day annual retraining orientation. GSEP training during these orientations consist of approximately one-hour initially and one-half hour during retraining. Job specific training for each individual is then scheduled, i.e., Equipment Attendants (EA's) receive a five week general systems training program, and then an eight week classroom/hands-on training. After classroom training, the EA receives eight weeks of on-the-job training in the LaSalle facility. A written record of each individual's training is kept by the Site Training Director. The inspectors determined that specific training for emergency communicators is not provided.

Offsite support personnel (sheriff, fire dept., ambulance, and hospital personnel) are invited annually by the licensee to participate in an onsite familiarization and training program. This annual invitation, from the licensee, is a letter describing the type of training offered. Hospital personnel (St. Mary's Hospital in Streator and Ottawa Hospital in Ottawa) and ambulance attendants are trained by Radiation Management Corporation (RMC). RMC submits their training report to the Production Training Coordinator at corporate headquarters. News media personnel are trained by the corporate public information staff. News media training is expected to be completed by Summer of 1981.

The onsite training program, as described, is dynamic and constantly being revised to reflect changes in the GSEP and personnel needs.

According to site training personnel, instructors have been selected and trained by corporate training personnel and meet a specific set of criteria established by corporate policy.

Based on the above findings, this portion of the licensee's program appears to be acceptable, however, the following should be considered for improvement:

- Establish formal training for those individuals that will be used as emergency communicators.

- Radiation Management Company (RMC) training audits and critiques submitted to the corporate office should be made available to the onsite training department.

- The site training department should be notified of all planned exercises and drills.

3.2 Program Implementation

Several members of the onsite operation group, i.e., Shift Engineers, Shift Foremen, Shift Technical Advisors (STA), Shift/Control Room Engineers (SCRE), Rad/Chem Technicians, and Environs Directors, were interviewed by the inspectors regarding their actions during an emergency. During these interviews, it became evident that additional training is needed regarding familiarization and understanding of all documents pertaining to an emergency.

All Rad/Chem Technicians (RCTs) interviewed expressed concern regarding the lack of training in Emergency Preparedness. RCT formal training qualification guide does not provide for specific training in Emergency Preparedness. Training in procedures (LZPs) has not been formalized. RCTs are asked to read the LZPs and then sign a form indicating that they have been trained. This is unacceptable. A specific formal training program for the RCT onsite roles during an emergency is necessary prior to fuel load. Further, this training, as a minimum must cover the following objectives:

a. Tasks to be performed during the first 60 minutes of a serious emergency on the backshift.

b. Post accident sampling and analysis for the first three hours of an emergency.

c. In plant radiation surveys during an accident.

d. Use and interpretation of both portable and fixed area radiation monitoring equipment, such as the Eberline PING-3 and SAM-2.

e. Interpretation of critical effluent monitoring data for assisting the Shift Engineer during the first hour of an accident (i.e., Station Vent Monitor and Standby Gas Treatment (SBGT) Monitor).

f. First aid and bioassay techniques.

g. Use of respirators during emergency situations.

Interviews and walkthroughs with several Shift Engineers, Shift Foremen, and Shift Control Room Engineers (all are Senior Reactor Operators) indicated that additional specific training on the GSEP and LZPs is necessary. Specific training is necessary in use and interpretation of the following procedures:

a. Classification of a Noble Gas Release (LZP-1200-2).

b. Classification of an Iodine Release (LZP-1200-3).

c. Classification of a Liquid Release (LZP-1220-4).

d. Protective Measures for On-Site Personnel (LZP-1360-1).

e. Shift Engineers (Acting Station Director) Emergency Procedure (LZP-1110-1).

f. Notifications (LZP-1310-1)

Interviews with various GSEP Station Group positions below the Station Director indicated the need for training on Emergency Operation Facility (EOF) procedures. Specifically, Rad/Chem Directors, Technical Directors, Maintenance Directors, and Operations Directors should be cognizant of those EOF procedures which are relevant to their counterparts in the corporate support staff. Training on these procedures should be designed to help make the onsite GSEP Directors aware of their counterpart EOF managers. The inspectors feel this could strengthen the interface between the TSC and EOF.

The inspectors discussed the overall training program for both onsite and offsite (corporate) personnel with the manager of the Training Production Department (TPD). Currently, the TPD is significantly upgrading their training program. Task analysis groups are being used to evaluate the training needs of CECO nuclear staff personnel. From this analysis, training program standards will be developed to standardize an adequate acceptable level of training for CECO nuclear station employees. The inspectors fully agreed with this approach.

Based on the above findings, the following deficiencies must be corrected to achieve an acceptable program:

- A specific formal training program for all Acting Station Directors must be developed. This program must include a means to verify that an adequate understanding of duties and responsibilities has been achieved, i.e., walk-through of relevant procedures.

- A specific formal training program for RCTs must be developed.

- The scope and depth of the existing GSEP training program must be re-evauated to ensure and verify that an adequate level of understanding has been achieved.

The following areas should be considered for improvement:

- Provide training in relevant EOF procedures to the Station Group Directors.

- Environs Directors should be retrained on the Environs Director (ED) and Environs Group (EG) procedures.

4.0 Emergency Facilities and Equipment

4.1 Emergency Facilities

4.1.1 Assessment Facilities

4.1.1.1 Control Room

Inspectors observed that the Control Room had adequate copies of the Emergency Plan and necessary Emergency Plan Implementing Procedures and Emergency Operating Procedures, e.g., LOAs and LGAs. Adequate primary and backup emergency communications exist to the Technical Support Center (TSC), Operational Support Center (OSC), Emergency Operations Facility (EOF), offsite local and state agencies, and the corporate office. Control Room operating staff were familiar with the use of this equipment. No deficiencies were noted.

4.1.1.2 Technical Support Center (TSC)

The inspectors observed the permanent TSC facilities, equipment and procedures. At the time of this appraisal, the following equipment was not installed:

a. dedicated primary and backup communications to Control Room, EOF, and CCC.

b. NRC Health Physics network and Emergency Notification System telephones.

c. A microwave voice channel between the CCC, Shift Engineer's office, TSC, and EOF has not been installed.

d. Nuclear Accident Reporting System (NARS) to state and local offsite agencies.

The above are Open Items.

The above communications exist in the interim TSC at the time of this appraisal, and a dedicated microwave/radio telephone for communications between the TSC and HP field monitoring teams is in place.

The inspectors observed one System Parameter Display Systems (SPDS) that was partially installed in the permanent TSC. These SPDS's should be operational in accordance with the schedule set forth in NUREG-0696. The licensee believes the permanent TSC will be fully functional with the exception of full operation of the SPDS by fuel load. Operation of the SPDS will be observed at a later date. This is an Open Item.

Radiological habitability monitoring of the TSC will be accomplished by an Eberline PING-3 which measures direct and airborne radiation levels. Operation of the PING-3 has not been demonstrated. This is an open item. The inspectors will examine training and operation related to this monitor at a later date.

The inspectors timed the walking distance between the TSC and Control Room. They determined it to be less than a five minute walk without use of the elevator. The Control Room is five stories above the TSC.

The inspectors observed that an adequate and functional independent ventilation system exists for the TSC. Prefilters, particulate (HEPA) and charcoal filters are installed in the ventilation system.

The inspectors observed that adequate working space is available in the TSC for assigned personnel, including working space for five NRC personnel.

The inspectors observed up-to-date records and procedures in the TSC, such as: FSAR, Plant Operating Procedures, Emergency Operating Procedures, Tech Specs, and various schematics and drawings. Further, the plant archives are readily accessible to TSC personnel.

The licensee indicated communications (primary/backup) will be functional and PING-3 operation and training will be completed prior to fuel load. These items will be re-examined prior to fuel load.

4.1.1.3 Operational Support Center (OSC)

The inspectors observed the facilities and equipment located at the OSC. At the time of this appraisal, the following conditions were noted:

1. High range personnel dosimeters were not available.

2. High range portable gamma monitor (0-1000R) was not available.

3. Portable air sampling capabilities need to be implemented.

4. Permanent Emergency lighting is not available.

The inspectors observed that the OSC had adequate capacity and supplies, including respiratory protection, protective clothing, portable lighting, low-range portable radiation monitoring equipment and communications (primary and backup) equipment, except as noted above.

The licensee's shielding and dose calculations for the OSC indicate acceptable radiation levels for analyzed accidents.

Based on the above findings, the following deficiency must be corrected to achieve an acceptable program:

- Emergency equipment noted above must be installed prior to fuel load.

4.1.1.4 Emergency Operation Facility (EOF)

The interim nearsite EOF is located 520 meters to the southwest of the facility, in warehouse No. 2. The building is approximately 60 ft. x 220 ft. The eastern portion (28 ft.) of this warehouse is petitioned off and equipped as the EOF. The west end of the building houses a news media center that is capable of housing several members of the press. The space in between the media center and the EOF is in use for warehousing.

The heating is electric with no backup power. In addition, there is no backup power for the computer terminal or the base station radio for the field monitoring teams.

The EOF serves as an emergency control or recovery center and a media center. The equipment provided to accomplish this function includes:

- Emergency Notification System (ENS) telephone.
- Health Physics Network (HPN) telephone.
- Corporate Command Center (CCC) telephone.
- Nuclear Accident Reporting System (NARS) telephone.
- Microwave radio phone link between the field monitoring teams, Control Room, TSC, and CCC.
- Radiation survey meters.
- Air samplers capable of particulate and radioiodine sampling.
- Sample counting equipment.
- Personnel dosimetry.
- Check sources.
- Site maps which correlate air sampling stations as a function of direction and distance from the site.

- Plant layout drawings and schematics of systems, pipes and valve locations.

- Emergency personnel protective equipment.

The site Environs Director was asked to activate the computer terminal in the EOF and bring up the dose assessment program on the computer. He could not immediately get the phone line connection, however, he eventually got the Corporate Command Center, which took necessary actions to permit the site line to be activated. This will be self correcting when the site becomes operational.

The inspectors observed a licensee test of field portable radios. It was observed that those radios could easily transmit and receive messages out to approximately four miles. Antennas (rod mounted), if installed in the field team vehicles, could enhance transmission and reception.

Based on the above findings, this portion of the licensee's program appears to be acceptable, but the following matters should be considered for improvement:

- Antennas should be provided for the RCT field monitoring vehicle.

- Acquire a third "Handi-Talky" radio as backup for the field monitoring teams.

Open Item - The licensee indicated that an area monitor, PING-3 (Eberline), to measure air particulates, radioiodine and noble gases will be placed in the EOF prior to fuel load. This will replace the portable air sampling equipment.

4.1.1.5 Post-accident Primary Coolant Sampling and Containment & 4.1.1.6 Air Sampling and Analysis

The inspectors examined the licensee's Post Accident High Range Sampling System (HRSS) Room. Currently the licensee's equipment is partially installed. The HRSS being installed is a Sentry Model. Shielding of the sampling room is not completed. The licensee completed a design and shielding review of this area and believes it to meet NUREG-0737 criterion. Licensee's procedures and training for coolant sampling and analysis has not been completed. A walkthrough of the sampling system will be conducted by NRC after complete installation of equipment and licensee personnel training. The licensee stated that management chemists and all Rad/Chem Technicians will be trained on the system. This is an open item.

The Sentry Model can automatically dilute samples 1000:1 and provide for insertion of samples into a shielded cart for transportation. The system also provides capability for primary and secondary containment air sampling. This includes sampling of the drywell air, suppression chamber air and reactor building air. A remote independent ventilation system similar to the TSC is used for this sampling area.

4.1.1.7 Post-accident Gas, Particulate, and Iodine Effluent Sampling and Analysis

The licensee plans to install a General Atomics Wide Range Sampling Skid which has a grab sample capability. This system is scheduled to be installed during July 1981. Pending its installation and training on the collection of grab samples, this is an Open Item, and will be examined prior to fuel load.

4.1.1.8 Post-accident Liquid Effluent Sampling and Analysis

The licensee's installed liquid processing system consists of tanks and equipment for collecting, processing, and releasing radioactive liquids. All radioactive liquid releases, including post-accident liquid releases, would be made on a batch basis after processing, from the radwaste discharge tanks. These tanks are located in the radwaste building, which has an area radiation monitor. However, the area in the immediate vicinity of the sampling panel for these tanks does not have an area radiation monitor. The licensee stated that this location would be accessible during accident conditions.

The sample counting room would be unavailable during accident conditions due to radiation from the reactor building. For this case, the licensee must acquire and calibrate a portable Multi-Channel Analyzer (MCA) system that can be relocated to an area of low radiation levels so that these samples can be analyzed. The licensee also stated that both the hot and cold chemistry labs would be unavailable due to high radiation levels. An area should be set up to perform necessary dilutions for these samples. Back-up laboratory and analysis capability can be provided at the Dresden Nuclear Power Station which is located approximately 15 miles from LaSalle.

Based on the above findings, the following matters should be considered for improvement:

. Set up an area to perform necessary sample dilutions.

The following is an open item:

. Acquire and calibrate a portable MCA system.

4.1.1.9 Offsite Laboratories

The licensee procedure ED-21 addresses the offsite laboratories. Appendix I of this procedure lists the capability, equipment and the analyses that can be performed by each of the offsite laboratories operated by Eberline. They are located in West Chicago, Illinois and Albuquerque, New Mexico. Appendix II of this procedure lists the services that will be provided by Hazelton Environmental Science, located in Northbrook, Illinois. These two major laboratories each list sufficient capability to satsify the emergency requirements for offsite Laboratory Services.

Based on the above finding, this portion of the licensee program appears to be acceptable.

4.1.2 PROTECTIVE FACILITIES

4.1.2.1 Assembly/Reassembly Areas

The appraisal team has examined the assembly/reassembly area which is located in the Radwaste Building. This area is currently under construction, therefore, no emergency equipment or supplies were installed. However, it was learned that the licensee does not have emergency lighting in this area, and portable radiation monitors are not going to be stationed. A fixed ARM is located in the Radwaste Building, but it is not designed to measure the assembly area.

Offsite relocation areas are available at Dresden Nuclear Power Station, Braidwood Nuclear Power Station, and Commonwealth Edison Office in Streator, Illinois.

Based on the above findings, the following deficiencies must be corrected to achieve an acceptable program:

- Portable radiation area monitors must be installed at the assembly area.

- Emergency lighting must be installed at the assembly area.

4.1.2.2 & 4.1.2.3 MEDICAL TREATMENT AND DECONTAMINATION FACILITIES

The appraisal team has reviewed the onsite medical treatment facilities. These facilities are consistent with the description in the plan and procedures. The medical and decontamination facilities are a mutual use area. Access to the medical facility is through the decontamination area. The medical facility is accessible to a stretcher. First aid and decontamination equipment is strategically located near radiation/contamination controlled areas. An operable, calibrated survey instrument is available, however, this unit is not equipped with a directional shielded probe. Communications are available. Procedures for decontamination and treatment are available, however, personnel training has not been completed. This is discussed in Section 3.2 of this report.

Due to construction activities, only those areas under Commonwealth Edison control have been supplied with first aid equipment, such as first aid kits, stretcher and blankets. Installation of this equipment will be examined during a future inspection. This is an Open Item.

4.1.3 Expanded Support Facilities

The appraisal team examined the Expanded Support Facilities. The licensee will augment emergency resource personnel from Dresden and Quad-Cities Nuclear Power Stations. Space has been allocated for contractor (i.e., General Electric and Sargent Lundy) and is available in the interim EOF. Space for five NRC personnel is also provided in the interim EOF. Adequate communications are available to support these personnel. Additional resources, i.e., trailers, can be provided through the Corporate Command Center's Director of Manpower and Logistics.

Based on the above findings, this portion of the licensee's program appears to be acceptable.

4.1.4 News Center

A section of the temporary EOF has been designated as a news media center at the west end of Warehouse No. 2. This room can accommodate approximately fifty people. Telephones, when required, will be installed when the EOF is activated. A security guard will control access to the one outer door leading into the news media room. Audio visual equipment, copying machines, a public address system and other required news aids will be brought to the EOF when activated. Presently plant and site maps are installed.

Based on the above findings, this portion of the licensee's program appears to be acceptable.

4.2 Emergency Equipment

4.2.1 Assessment

4.2.1.1 Emergency Kits and Emergency Survey Instrumentation

The inspectors reviewed the emergency kits and survey instrumentation. These items were shown to the inspectors by members of the licensee's staff. The licensee has pre-positioned supplies and instrumentation in two kits located in the operations office of the security force. The kits were located according to the plan. Gasoline operated generators were not placed at this location due to the potential fire hazard. These generators and additional gasoline are located at the temporary EOF in a fire proof locker. The proper operating procedures were not located in the emergency kits. The kits should have the EG series procedures rather than LZP procedures. The instruments were calibrated and operable. These emergency kits contained portable survey instrumentation capable of monitoring personnel contamination when leaving areas suspected of contamination. The emergency kits also contained sample collection equipment. Measurement for radioiodine concentrations in the field is not presently a capability of the emergency kits. However, SAM-2 (Eberline) units will be available for radioiodine field measurements. The emergen y kit portable instrumentation consisted of a "Cutie Pie", and a low range PRM type instrument with three probes, one to detect alpha radiation, a sample counting probe, and a beta/gamma probe capable of distinguishing between beta and gamma.

Each appropriate individual has keys necessary to gain access to sampling areas assigned to him. Instrument calibration procedures will be revised as soon as new sources arrive.

Based on the above findings, the licensee's programs appear adequate but the following should be considered for improvement:

- LZP procedures in the emergency kits should be replaced by EG procedures.

The following is an Open Item:

- SAM-2 (Eberline), or equivalent radioiodine field measurement capability should be made available to the teams.

4.2.1.2 Area and Process Radiation Monitors

This subject was reviewed for emergency preparedness purposes by the NRC inspectors. The subject was examined for health physics purposes by an NRC inspection team on January 26-27 and February 5-6, 1981, with findings transmitted by letter dated March 6, 1981. The open item in that report with respect to area radiation monitors states that sensors for three of the monitors are not located so that their readouts would accurately reflect their intended use. Corrective action is being considered.

Of the area radiation monitors indicated in the GSEP as being relied upon for emergency detection, classification, and assessment; the fuel pool exhaust monitors and vent stack radiation monitors have not yet been installed. These monitors will have two readouts per unit; a dial meter instrument and a strip chart recorder. The GSEP area radiation monitor readouts are in the Unit 1 and 2 control room and are visible from the center desk. Readouts are planned to be installed in the Technical Support Center and the Emergency Operations Facility, via a CRT panel.

The sensors will have operating characteristics consistent with accident conditions. The sensors are hermetically sealed and have the appropriate range to monitor the accident conditions, that is, they are designed to cope with the heat and humidity of accident situations. Certification by the manufacturer is being prepared and will be included in the FSAR in Appendix M.

Calibrations are to be performed over the entire response range. The area radiation monitors will be channel checked to determine operability every twelve hours and will be electronically checked once per month. They will be calibrated using a radioactive source at each refueling outage; approximately once per eighteen months. The proposed technical specifications will require grab samples be taken from the monitored volume if both channels of the instrument are inoperative and the instrument shall be repaired or replaced within thirty days. Instrument maintenance procedures are being developed. Diesel generators provide backup power supply.

Based on the above findings, this is an open item and will be examined at a subsequent inspection prior to fuel load.

4.2.1.3 Non-Radiation Process Monitors

Chlorine and ammonia process monitors in the control room ventilation system to ensure safe control room habitability are in place and the annunciators are readily observable in the control room. If safe chlorine or ammonia concentrations in the control room are exceeded, the automatic alarm is annunciated and the filtration flow path configuration is changed to route control room air through carbon filters. EALs are established for these events.

Based on the above findings, this portion of the licensee's program appears to be adequate.

4.2.1.4 Meteorological Instrumentation

The meteorology system currently installed provides the basic parameters required by the emergency plan implementing procedures, with the exception of a ten meter measurement needed to make ground level release dose assessment calculations. The readouts are calibrated in accordance with a written calibration procedure. The instruments and equipment are visually inspected twice weekly and defective equipment promptly replaced.

Meteorological Instruments readout in the control room and the 15 minute averages of parameters are fed into the computer system with CRT display in the control room and in the Corporate Command Center. Information from the Command Center is available to the temporary EOF computer terminal via modern transfer on the current system.

The licensee currently transmits the station meteorology parameter into the computer where a Class B model is used in computing the offsite doses in the plume pathway using straight line meteorology. A new model identified as B is available and will be in use as soon as one link in their microwave system is complete.

This will permit plume meander to be plotted and the dose isopleths will be computed that will more accurately represent the dose resulting from the actual dispersion wherever the wind moves the plume.

Their current Class B model is being upgraded and integrated into the Class A model. This model will use real time meteorology and source terms to compute the dose until the Class B model is activated through the EOF.

The licensee's load dispatcher has excellent tracking of weather conditions and keeps the station appraised of even local storms as well as the severe storms.

There are provisions for using Dresden meteorology if local information is unavailable.

Based on the above finding, the following deficiencies must be corrected to achieve an acceptable program:

- Wind direction and speed must be monitored at a ten meter elevation which will not be affected by man-made obstructions.

- Chart recorders of primary meteorological measurements be readout in the control room.

- A backup system or equivalent to the primary system must be resolved if the Dresden Station meteorological program is determined to be non-representative.

4.2.2 PROTECTIVE EQUIPMENT

4.2.2.1 Respirator Equipment

The appraisal team reviewed the availability of respiratory equipment for emergency use. There are, available onsite Self Contained Breathing Apparatus (SCBA) devices, both back pack and supplied air, and respirators, both full and half mask. The station has its own air supply refilling station. The SCBA equipment could be used under conditions where internal areas of the plant have high airborne/direct levels of radiation. This equipment was found to be adequate.

4.2.2.2 Protective Clothing

The appraisal team inspected the availability of protective clothing, onsite. There was an ample supply of protective clothing, ranging in sizes from extra small to extra large. The protective clothing would be accessible during emergency conditions. The quantity and availability was deemed adequate.

Based on the above findings, this area of the licensee's program appears adequate.

4.2.3 Emergency Communications

The appraisal team conducted a review of the onsite/offsite available communications. All the equipment identified in the plan was available except for the backup microwave/phone communications system. There were provisions for routinely checking the operability of these emergency communications devices and equipment. There is a 24 hour per day capability to notify NRC, state and local authorities.

Each of the following key communications networks have a backup:

- Emergency response initiation equipment.
- Equipment to communicate between the facility and near site EOF.
- Equipment to communicate between the facility, local, and State EOC's.
- Equipment to communicate with local contiguous governments within the Emergency Planning Zone.
- Equipment to communicate with NRC Headquarters and Region.
- Equipment to communicate between the facility and the Corporate Command Center.

The inspectors tested the radio channel link between the Corporate Command Center, TSC, EOF, and Field Teams. This is the system that will be used by the monitoring teams. All parts of the link were tested and found adequate out to four miles.

The microwave voice channel connecting the CCC, Shift Engineer's Office, TSC and EOF has not been installed. This is expected to be installed by September 1981. This is an open item.

Based on the above findings, this portion of the licensee's program appears to be adequate.

4.2.4 Damage Control/Corrective Action and Maintenance Equipment and Supplies

Needs for onsite damage control include temporary shielding, lifting equipment, welding equipment, high level radiation waste handling storage capability, and decontamination supplies and equipment. These needs have been met from onsite maintenance equipment and supplies as determined by the inspectors from an interview with the Maintenance Superintendent. Extra equipment, if required, can be obtained from nearby Dresden Nuclear Station through the Manpower and Logistics Director of the CCC.

Based on the above findings, this portion of the licensee's program appears to be acceptable.

4.2.5 Reserve Emergency Supplies and Equipment

The LaSalle County Station has an inventory of supplies, including; clothing, radiation detection instruments, respiratory equipment, first aid supplies, decontamination supplies and equipment, dosimetry for the radiological environmental monitoring for support to emergency response. In addition, LaSalle County Station can draw on supplies including compatible radiation protection instrumentation, communications and transportation equipment from the Dresden and Quad Cities sites.

The quantity of emergency reserve supplies is checked against an inventory list specifying minimum stock levels. Supply cabinets are located for ready access in the guard shack, the laundry room, respirator maintenance shop, decontamination area, rad/chem area, and at each level in the plant near the elevator. The supplies and equipment are inventoried monthly.

Based on the above findings, this portion of the licensee's program appears to be acceptable.

4.2.6 TRANSPORTATION

The NRC inspectors examined the CECO half ton van which is to be used in supporting field team emergency response. The van is properly sized, but is not equipped with its own communications equipment. The portable walkie-talkies, which are to be taken in the vehicle, will transmit and receive from within the vehicle. The ignition key to the van is kept by the rad/chem teams for their use, and provisions exist to ensure the van is available to the rad/chem teams during an emergency. The van is a standard two wheel drive model which is acceptable in most weather conditions. However, with heavy snow and ice storms or in attempting to maneuver over muddy terrain, it would not be acceptable and a four wheel drive van is preferable. The van is the only dedicated emergency vehicle.

Based on the above findings, this portion of the licensee's program appears to be acceptable, however, the following should be considered for improvement:

- Emergency vehicles purchased in the future should be equipped with four wheel drive.

- Provide portable (roof mounted) antennaes for the walkie-talkies.

5.0 PROCEDURES

5.1 General Content and Format

The inspector reviewed all of the GSEP implementing procedures. All procedures were arranged in the same format with the following general headings: (a) purpose, (b) references, (c) prerequisites, (d) precautions, (e) limitations and actions, (f) procedure (the actual body of the procedure), (g) checklists, and (h) technical specification reference. Procedures were written to cover all of the functions specified in the GSEP, and were organized such that each GSEP Director has one procedure that described all of his duties, responsibilities, and authority within the GSEP.

Based on the above findings, this portion of the licensee's program appears to be acceptable.

5.2 Emergency, Alarm, and Abnormal Occurrence Procedures

The licensee has two separate sets of abnormal occurrence procedures. One set (LGAs) is primarily used for the protection of the reactor core and containment, while the other (LOAs) deals with anything abnormal. The inspectors reviewed all of these procedures. Several of the LOAs describing emergency conditions which warranted the classification of the event as an emergency did not direct the user (Nuclear Station Operator) to inform the Shift Engineer of a possible GSEP condition. This was confirmed during the walkthrough of several Shift Engineers. When given a GSEP cue, some went to the GSEP procedures and classified the event, but failed to take the actions specified in the LOA, while others went to the LOAs, but failed to classify the event under GSEP. This failure of procedures to interface is a significant finding which could lead to a failure to classify and report the event in a timely manner. The following LOA procedures, which deal with events listed in the Emergency Action Levels, should require, as a subsequent operator action, that the Shift Engineer be notified to classify the event and initiate GSEP if required:

a. LOA-AA-02 Operations During Tornado Warning.

b. LOA-AP-02 Failure to Auto Transfer After Loss of Auxiliary Transformer.

c. LOA-AP-07 Loss of Auxiliary Electrical Power.

d. LOA-AR-02 Area High Radiation.

e. LOA-AR-03 High Airborne Activity.

f. LOA-DC-02 125 VDC System Failure.

g. LOA-FC-02 Loss of Normal Level Control in the Fuel Pool.

h. LOA-NB-02 Failure of a Relief Valve to Seat Properly or Inadvertent Actuation of a Safety Relief Valve.

i. LOA-OG-02 Off Gas Hydrogen Explosion.

j. LOA-PR-03 High Release Rate.

k. LOA-RH-01 Loss of Shutdown Cooling.

l. LOA-RL-01 Failure of Reactor Water Level Control System in Auto or Single.

m. LOA-RR-07 Loss of Recirculation Flow - Both Loops.

n. LOA-RX-01 Control Room Evacuation.

o. LOA-SC-02 Initiation of Standby Liquid Control (SBLC).

p. LOA-SC-03 Reactor Fill From SBLC.

q. LOA-VC-01 Operation of Control Room HVAC During High Radiation, Smoke, or Chlorine Detection.

r. LOA-ZZ-01 Operation During Earthquake Conditions.

In addition to the above procedures, all procedures that involve operations when a Limiting Condition for Operation (LCO) has been exceeded should cue the operator to notify the Shift Engineer to classify the event in accordance with GSEP when a unit shutdown is required by the Action Statement of the LCO.

The inspectors reviewed the new proposed LGAs which, if approved, are symptom oriented rather than systems oriented in an accident. These symptom oriented emergency procedures are designed to maintain reactor vessel water level and containment isolation. These procedures direct the reactor operator to the GSEP by notifying the Shift Engineer and requesting him to classify the emergency in accordance with the GSEP.

The containment control procedure, LGA-3, under subsequent operator actions, requires the operators to monitor critical containment system indications (i.e., containment pressure, temperature, hydrogen, and suppression pool level and cooling). The operator is not directed to monitor the high range containment radiation monitor. This is a significant deficiency and must be corrected.

Walkthroughs of Shift Engineers, Shift Control Room Engineers (SCREs), and Shift Foremen were conducted by the inspectors. These walkthroughs were designed to demonstrate the ability of the individuals who would be responsible as the Acting Station Director to recognize and classify various Emergency Action Levels, and to make the required GSEP notifications. For the most part, these Acting Station Directors correctly classified events and responded appropriately. In most cases, events were properly classified, but on numerous occasions evacuation/assembly alarms were not sounded for Site Area or General Emergencies, and recommendations to offsite agencies for General Emergency condition were not made. In a few cases, operating procedures were followed without the correct GSEP classification or notifications being made, and in some cases the opposite occurred. These significant deficiencies all relate back to improper procedures, and better training on the duties of the Acting Station Director, particularly during the first hour of an emergency on the backshift.

Based on the above findings, the following deficiencies must be corrected to achieve an acceptable program:

- Failure of several LOA procedures to require the Acting Station Director classify the event under the GSEP as appropriate.

- LGA-3 containment control must ensure monitoring of the radiation levels inside containment as a subsequent operator action.

5.3 Implementing Instructions

Separate GSEP procedures existed for each Director in the GSEP organization. These procedures specified each Director's responsibilities, and the management level within the GSEP to which he reports. The Shift Engineer or Acting Station Director has complete authority over the initial operations of the Station Group, and is responsible for the initial classification of an event under GSEP and making the proper initial notifications. Individual emergency classifications, e.g., transportation accident, Unusual Event, Alert, etc., comprise subsections of the Station Director's procedure. This emergency classification is made based on observable information which is readily available using the procedure entitled "Classification of GSEP Conditions," (LZP-1200-1).

The Station Director (Acting Station Director) Implementing Procedure (LZP-1110-1) is used by the Shift Engineer or his alternate (Shift Foreman) if a GSEP condition exists. This procedure directs the Acting Station Director to classify the event under GSEP, and references him to the implementing procedure used to classify the event. Depending upon the classification, the Acting Station Director is required to perform various actions including notifications, and activations of the various onsite groups. For both of these actions, this procedure references the procedure that is used to implement those actions. This procedure (LZP-1110-1) contains the following significant deficiencies: (a) it does not specify which actions must be implemented by the Acting Station Director and which actions may not be delegated to other personnel; (b) it does not require actions

be taken to evacuate non-essential personnel during a Site Area or General Emergency; (c) it does not require the use of the Nuclear Accident Reporting System (NARS) form during initial offsite notifications; and d) an immediate action must be to direct the Rad/chem Technicians to survey or collect samples, as appropriate, particularly during the back shifts.

During a walkthrough of Shift Engineers, on at least one occasion the Shift Engineer stated that in a General Emergency condition he would have the center desk operator notify the state and local authorities with recommended protective actions. This is not acceptable, and the procedure must be revised to state that recommending protective actions to offsite agencies cannot be delegated to any individual other than the Acting Station Director. The Station Director can, however, delegate the transmission of the recommended actions to the offsite agencies, but he alone must determine what actions should be taken. As stated in NUREG-0654, the GSEP requires that all non-essential personnel be evacuated for a Site Area emergency, however, the Site Area emergency section of the procedure does not specify as an action the sounding of the evacuation/assembly alarm. Most of the Shift Engineers failed to initiate the evacuation of non-essential personnel under both Site Area and General Emergency cues. The procedure requires the Acting Station Director to notify the System Load Dispatcher during any emergency, however, it does not require the use of the NARS form, even though the System Load Dispatcher may contact offsite agencies and provide them with the information requested on the form. At the time of the walkthroughs, NARS forms were available in the Control Room, but could not be located by the Shift Engineers. The significance of this problem was brought up when some of the Shift Engineers asked to make protective action recommendations during a General Emergency condition, recommended evacuation of the wrong sectors based on the observed wind direction. Completion of the appropriate sections of the NARS form, (e.g., those sections involved with the class of emergency, whether a release is taking place, potentially affected sectors, and whether protective measures may be necessary) would have enabled the Shift Engineer to immediately determine which sectors are to be evacuated.

The Shift Engineers during the walkthroughs did not direct the Rad/Chem Technicians (RCTs) under their supervision to make any surveys or perform any sample collections. During the first hour of an Emergency, these results could prove critical in the determination of the source term for a radioactive release, especially it certain control room instruments went off scale or become inoperable.

Based on the above findings, the following deficiency must be corrected to achieve an acceptable program:

- Failure of the Acting Station Director Implementing Procedure (LZP-1110-1) to (a) specify which actions must be carried out by the Acting Station Director and cannot be delegated, (b) require the evacuation of non-essential personnel during a Site Area or General Emergency, (c) require the completion of the

appropriate sections of the NARS form prior to notification of the System Load Dispatcher, and (d) direct RCTs to conduct appropriate surveys or sample collections, particularly during backshifts.

5.4 Implementing Procedures

5.4.1 Notifications

For all emergency classifications, the Acting Station Director's procedure (LZP-1110-1) specifies who is to be notified, what onsite organizations need to be augmented, and in what order these actions are to be implemented. Separate procedures are referenced to be followed for augmentation of onsite personnel (LZP-1320-1) and for notification of offsite agencies (LZP-1310-1). The procedure for notification of offsite agencies requires that NRC be notified of all events requiring classification of emergencies under GSEP, or as required by either 10 CFR 20.403 or 10 CFR 50.72. These NRC notifications are made using the Emergency Notification System (ENS) red phone.

Figure 5.4 shows the means by which offsite agencies are notified based on the emergency classification. There is a direct phone connection between the control room and the system power dispatcher. The Corporate Command Center Director will normally notify the State of Illinois Emergency Service and Disaster Agency (ESDA), which will implement local notifications as specified in the Illinois State Emergency Plan. Although the CCC Director is required to notify ESDA of recommended protective actions, his procedure does not contain Tables 6.3-1, 6.3-2, or 6.3-3 of the GSEP which describe protective action recommendations based on plant conditions. These Tables should be included in his procedure (CC-1) and referenced therein. This form of local notification was set up by the State of Illinois and agreed to by the licensee. To assure that the Corporate Command Center (CCC) Director is available at all times, the licensee has set up a duty officer system, requiring that one of the individuals qualified to act as the CCC Director is on 24 hour a day call through the use of a paging system. In addition, the CCC Director on call leaves a phone number at which he can be reached with the System Load Dispatcher whenever he travels from home. Normally the CCC Director duty is rotated on a weekly basis.

The Corporate Command Center Director's procedure (CC-1) specified the emergency classes that lead him to activate either the CCC or both the nearsite EOF and the CCC. This procedure also requires the Institute for Nuclear Power Operations (INPO) be notified for any Alert, Site Area or General Emergency. If the CCC Director determines that the EOF and/or CCC need to be activated, the CCC Director will notify all of the personnel required to man these locations using a prioritized telephone call list located in the last section of the GSEP. To assure that this phone list is available to all CCC Directors, two copies of the GSEP, one for home and one for the office, are provided. As a personal reference, most CCC Directors carry a plasticized phone list in their wallets. The CCC only is activated during an Alert, and is activated at the discretion of the CCC Director for Unusual Events or transportation accidents. For Site Area emergencies or General

Emergencies, both the CCC and the EOF are activated. In cases where the EOF is activated, the Advisory Support Director's procedure (EOF-10) specifies that this group will consist of a senior representative of the NSSS supplier, the NRC, a public information official from the licensee (usually a Vice-President), and appropriate authoritative consultants.

The Technical Support Manager is responsible for assembling and directing a technical support staff. His Procedure (EOF-2) states that he should activate the Technical Support personnel using the call list in the GSEP telephone directory which is supposed to list names of qualified persons for each of various technical disciplines, such as core theory, transient analysis, metallurgy, etc. However, the current GSEP telephone directory does not contain any such list of names. The GSEP telephone directory should be corrected to include a list of qualified individuals for each of the various technical disciplines.

The Acting Station Director uses the procedure entitled "Augmentation of Plant Staffing" (LZP-1320), to augment the station staff and activate the Technical Support Center (TSC). For an Unusual Event, the Station Director, Operations Director, and Maintenance Director are contacted. If additional personnel are needed, they are normally contacted by the Operations Director. For an Alert or higher emergency classification, the Operations Duty Supervisor will initiate a telephone chain that will result in complete manning of the TSC. The Operations Duty Supervisor is on 24 hour a day call and can be reached at any time. However, none of the other Station Group Directors are on call, and the phone directory only lists three persons for most of these Director functions, without guaranteeing that at least one of these people will be available at all times. Further, this procedure does not prioritize these call lists so that the TSC can be at least partially manned within 30 minutes. This is a significant deficiency, and must be corrected so that decisional functions of the TSC can begin as soon as possible. Because of the shortage of personnel on the Station Group Directors phone list, it is recommended that the Technical Director and Rad/Chem Director, in addition to the Operations Duty Supervisor, be on 24 hour a day call system.

When initial notification and augmentation is performed, planned messages are used to ensure that persons contacted know what class of emergency exists and where they are to report. These messages are included in the procedure.

Notifications to offsite groups are made using the NARS form (see Section 5.3). The Operations Director's procedure (LZP-1120-1) requires that he verify that the System Power Load Dispatcher and the Station Director have been notified.

The current LZP-1700-1 procedure, which is the GSEP Station Group Directory, and procedure LZP-1320-1, augmentation of plant staffing, do not agree with the personnel assignments listed in the April 1981, GSEP telephone directory. Both of these station procedures should be revised to incorporate changes made in the April 1981, GSEP telephone directory.

Although Section 8.5 of the GSEP specifies that names and phone numbers of the GSEP organization and support personnel shall be reviewed and updated at least quarterly, Station Procedures LZP-1700-2 (Station Employee List) and LZP-1700-3 (Station Phone List) both state that these lists will be reviewed at least semi-annually. These procedures should be revised to incorporate the requirements of the GSEP.

Based on the above findings, the following deficiency must be corrected to achieve an acceptable program:

- Onsite staffing augmentation must be prioritized to assure staffing of the TSC as soon as possible with necessary personnel.

The following matters should be considered for improvement:

- Protective Action Tables in the GSEP should be incorporated and referenced in the CCC Director's procedure (CC-1).

- Technical support personnel should be listed in the GSEP telephone directory for each of the various technical disciplines.

- The Technical Director and Rad/Chem Director should be on a duty call system.

- The Station telephone directories (LZP-1700-1, LZP-1700-2, and LZP-1700-3) should be revised to agree with requirements/lists in the current April 1981, GSEP.

5.4.2 ASSESSMENT ACTIONS

After initial notification of a GSEP condition and the activation of the TSC, the Technical Director performs the long term assessment of the GSEP condition, including such factors as the containment activity, release rate information, meteorological conditions, and radiation monitor readings. He assists the Rad/Chem Director with onsite radiological/technical matters. These actions are all delineated in the Technical Director's procedures (LZP-1130-1). The Rad/Chem Director conducts onsite assessment of the effluent release or radiation problem requiring GSEP activation. His procedure (LZP-1180-1) does not specify when and in what order reactor coolant, containment air, or effluent samples should be collected, nor does it include a means to record the results of these analyses. This is a significant deficiency in the ability to determine the source term for any potential release.

The initial determination of an emergency classification and the assessment of actions to take is made by the Shift Engineer. The Shift Engineer makes these assessments using four procedures. LZP-1200-2, Classification of a Noble Gas Release requires the use of a calibration factor that is not in the procedure. This is an Open Item pending calibration of the plant vent Noble Gas monitor. The procedure LZP-1200-3, Classification of an Iodine Release should be revised to include block sections on the graph indicating the various emergency classifications. This procedure is based on obtaining an iodine sample result although the procedure to collect and analyze this sample using the General Atomic System has not yet been completed. Procedure LZP-1220-4, Classification of a Liquid

Release, requires the use of a calibration factor that is not in the procedure. This is an open item pending calibration of the liquid waste and service water effluent monitors.

In the process of activating the TSC, a Rad/Chem Director reports to the TSC and an Environs Director reports to the EOF. The Environs Director is responsible for coordinating the activities of the Environs Group or offsite monitoring teams. Initial direction of these teams is provided by the Rad/Chem Director until the Environs Director assumes his duties. The Rad/Chem Director is responsible for all radiological assessment actions inside the plant boundary, and implements these through the use of his procedure (LZP-1180-1). Offsite radiological assessments are performed by the Environmental Director (for an Alert) at the CCC, or the Environmental/Emergency Coordinator at the nearsite EOF. Procedures (EOF-3 and ED-1) specify the responsibilities for offsite radiological assessments. There is no overall procedure which orchestrates the implementation of the accident assessment scheme. The licensee has chosen to define managerial positions responsible for various aspects of the accident assessment, and incorporate the particular responsibilities of each manager into an individual procedure to be used by that manager.

Separate procedures (ED and EG series) have been prepared to allow the individuals responsible for offsite dose projections to compute the following: (a) exposure rates, (b) evacuation distances based on the EPA protective action guides, (c) individual organ doses based on the actual isotopic mix of the release, (d) doses based on actual field measurements, (e) determining the evacuation range based on activity in containment, (f) determining whether sheltering or evacuation should be recommended, (g) determination of deposition rates based on the release, and (h) estimating the dose based on raw milk or grass sample results. These procedures are routinely used by the Rad/Chem Director, Environs Director, Environmental Director, Environmental/Emergency Coordinator, and their staff.

The Emergency Action Levels that deal with the possibility of an imminent release of radioactive material make use of the gaseous effluent monitors and the primary containment activity monitor. The Class A model for offsite dose calculations will be programmed into the process computer. This model will determine if offsite dose rates for various emergency classifications have been exceeded by performing a continual surveillance of meteorological conditions and these radiation monitors. If an emergency classification has been exceeded, an alarm will sound in the control room. This has not yet been installed, and is considered an Open Item until it can be proven functional.

Currently, ED-16 and LZP-1330-6 describe a means to quickly estimate the offsite dose from an unplanned release of radioactive effluents. Both procedures make use of a Table of Dose Factors to convert total curies of Iodine Discharged to an offsite Thyroid Dose, however, in LZP-1330-6, these factors are as much as 5½ times higher than they are in the identical Table in ED-16. In discussions with corporate personnel, the inspectors determined that ED-16 contains the correct factor. Since a Shift Engineer and Rad/Chem Director would most

likely use LZP-1330-6 to estimate offsite dose, the possibility exists to overestimate the offsite dose by at least a factor of five. LZP-1330-6 should be revised to incorporate the correct dose factors, as currently shown in ED-16, and should be routinely reviewed by the Supervisor of the Radioecology and Emergency Planning Group at the corporate headquarters during any station revisions.

No provisions currently exist for making dose projections if the control room instrumentation is inoperable. In this event, containment air, effluent, or reactor samples should be collected as appropriate. As was discussed earlier, this deficiency must be corrected so that the source term for any potential or actual release can be determined.

Although the Environmental/Emergency Coordinator or Environmental Director is responsible for all contact with Federal and State radiological assessment personnel, no provisions exist in their procedure (ED-1) to guarantee that information to these agencies is updated every 15 minutes. This procedure should be revised to specify the frequency and means for updating these agencies.

Based on the above findings, the following deficiency must be corrected to achieve an acceptable program:

- Procedure LZP-1180-1, Rad/Chem Director, must be revised to specify when and in what order of priority reactor coolant, containment air, or effluent samples should be collected, such as when control room indications are inoperable or offscale, so that the true source term for any potential or actual release can be determined.

The following matter should be considered for improvement:

- Revise EOF-3 and ED-1 to specify the means for updating Federal and State radiological assessment personnel every 15 minutes.

5.4.2.1
& 5.4.2.2 Offsite and Onsite Radiological Surveys

Radiological Surveys are conducted by the licensee using procedures in the Environs Group (EG) series. The licensee has made provisions for the activation of two monitoring teams, and has dedicated equipment for their use stored in the Security Gate House. Included with this equipment should be a complete copy of the EG series of procedures. The equipment is inventoried monthly to assure its availability for use. The licensee has also developed two station procedures, Environmental Surveillance Stations (LZP-1450-1) and Environs Monitoring (LZP-1450-2), which also address offsite radiological surveys. All of the information in EG-2 is duplicated in LZP-1450-1 and in LZP-1450-2. The portion of LZP-1450-1 dealing with TLD/air sampler surveillance should be incorporated into Procedure LZP-1550-9, and procedure LZP-1450-1 should be deleted. LZP-1450-2 should be deleted entirely, otherwise, the possibility exists that some environs team will be working with Procedure LZP-1450-2, and others will use EG-1. Procedure EG-1 specifies that monitoring teams must have, as a minimum, air samplers and Cutie Pie survey instruments. Although these

instruments are required, no reference is made to the procedures for use of this equipment. In the case of air sampling equipment, a procedure should be included to describe step by step actions which will be followed to ensure the collection of a representative sample. Also, this procedure should address the problem of sampling radioiodine in the presence of a high noble gas concentration. This procedure requires that they approach the plume from the upwind direction. This procedure specifies the exact locations where surveys are to be taken, using maps of the onsite survey locations and the offsite survey locations within ten miles of the plant as agreed upon with the State. It does not specify what instrument should be used or the methods to be used to determine whether the team is below the plume or in the plume.

No specific procedure has been written from the viewpoint of the personnel for making radiological surveys. A procedure must be written for use by the field team which specifies what instrument should be used, the means for documenting the results of surveys, specifying what information is to be included in communications between the survey teams and the EOF, and limitations and precautions, such as noble gas interference with radioiodine sampling.

The sampling procedure (EG-11) does specify how samples are to be collected and labeled. EG-2 specifies where samples are to be collected if requested by the Environs Director. Environmental samples are uniquely labeled by collection type and location, and are transported to the laboratory designated by the Environmental/Emergency Coordinator, who is also responsible for radiation protection guidance to the environs teams.

The procedures used by the environs teams do not specify which equipment and supplies are needed for team deployment. This procedure should be revised to incorporate the method to be used to acquire equipment and supplies needed for team deployment.

Based on the above findings, the following deficiency must be corrected to achieve an acceptable program:

- A procedure must be written for the field team's use to specify which instruments are to be used in various circumstances, what equipment is needed, the means for documenting results, and what information must be communicated to the EOF.

The following matters should be considered for improvement:

- Include EG series procedures with the dedicated environs team equipment.
- Delete LZP-1450-2.
- Incorporate LZP-1450-1 TLD/air sampler surveillance with LZP-1550-9.

5.4.2.3 In-Plant Radiological Surveys

There are no specific emergency in-plant radiological survey procedures. The station's normal procedure, Dose Rate Surveys (LRP-1280-2) is

routinely used by the Rad/Chem Technician (RCT) to determine radiation levels in-plant, however, this procedure does not address in-plant surveys during emergency conditions. The lack of an LZP addressing this is a significant deficiency. A separate LZP must be written to cover in-plant radiological surveys. This procedure must include: (a) the specific equipment to be used; (b) how results will be recorded, e.g., on an attached survey form; (c) how results will be communicated to the Rad/Chem Director; (d) techniques for determining the source of the radiation levels detected, e.g., gamma only versus beta and gamma; and (e) precautions and limitations, such as noble gas interference with radioiodine sampling, and Kr-88 decay to Rb-88 (gas to particulate).

Based on the above findings, the following deficiency must be corrected to achieve an acceptable program:

- Add a procedure to the LZPs for the performance of in-plant radiological surveys.

5.4.2.4,
5.4.2.6, Post-accident Primary Coolant Sampling, Containment
& 5.4.2.8 Air Sampling, and Stack Effluent Sampling

Procedures for the use of the emergency sampling equipment to be installed to collect these samples have not been written. Based on discussions with the licensee, this equipment will be installed and operational prior to full power operation. These procedures should contain: (a) checklist to guide the sample system operator through the necessary steps to collect the sample, (b) what equipment needs to be used, (c) a means to assure personnel exposure limits are not exceeded, (d) operation of the crane for transport of the coolant sample, (e) means for sample identification, and (f) the means to perform sample dilution if necessary to assure the counting deadtime limit of 20% is not exceeded.

The lack of these procedures is an Open Item, and will be reviewed during a future inspection.

5.4.2.5
5.4.2.7,
5.4.2.9, Post-accident Primary Coolant Analysis, Containment Air Analysis,
& 5.4.2.11, Stack Effluent Analysis and Liquid Effluent Analysis

The licensee has recently installed a new Multi-Channel Analyzer (MCA) for counting of these samples. The sampling procedures associated with each sample will be revised to include the dilutions necessary to reduce the radiation level on contact with the sample to less than 15mrem/hour. The routine chemistry procedures require that each sample prepared for counting will be wrapped to prevent contamination of the counting equipment. The procedure for the use of the new MCA requires the operator to perform a deadtime check to ensure that the deadtime is less than 20%, and to require a further dilution of the sample if the deadtime cannot be lowered below this value by counting the sample on a different sample shelf. The licensee stated that in an accident condition, the current

counting room would be unavailable for use due to high radiation levels. The licensee has purchased a portable MCA system, but has not yet prepared any procedures describing when, where, or how it is to be used.

Pending completion of the procedures, these areas remain as Open Items and will be reviewed during a future inspection.

5.4.2.10 Liquid Effluent Sampling

The licensee stated that there were no special liquid effluent sampling procedures developed for emergency conditions. Procedures used during routine operation could be relied upon, however, these procedures did not alert the user to precautions or limitations that need to be followed during emergency conditions. These precautions or limitations should include what types of protective clothing should be worn, required dosimetry, monitoring of radiation levels, an alert that high radiation levels may exist, and special care in handling a relatively "hot" sample. This procedure should also provide a step by step description of each action that must be taken to collect, transport, and dilute the sample.

LZP 1220-4, Classification of a Liquid Release, is the procedure used by the Shift Engineer to classify an emergency for abnormally high releases of radioactive liquids. Although this procedure states that a re-evaluation of the emergency classification should be done as soon as practicable based on sample results, it does not specify where this sample should be collected by the Rad/Chem Technician. This procedure must be revised to specify where the samples should be taken, e.g., off drain line from process radiation monitor, and direct the RCT to this location.

Based on the above findings, the following deficiency must be corrected to achieve an acceptable program:

- Procedure LZP-1220-4 must be corrected to direct the Shift Engineer to specify the RCT to collect a liquid effluent sample from the drain line of the alarming process radiation monitor.

The following matter should be considered for improvement:

- An LZP should be developed for sampling high level liquid effluent samples, such as from the above mentioned process monitor drain lines. This procedure should indicate its precautions and limitations.

5.4.2.12 Radiological Environmental Monitoring Program (REMP)

Emergency environmental monitoring is coordinated by the Environs Director using procedure EG-1. This procedure covers sampling of air, land, vegetation, water, milk, and offsite dose rates using TLDs. These are done when deemed appropriate by the Environs Director. If a full REMP program is deemed appropriate for a particular emergency, the management structure outlined in procedure ED-1 would be followed. The Environs Director would be responsible for supervising all field personnel involved in surveys or sample collection. The Environmental

Director would be responsible for arranging with contractor laboratories for all sample analysis. Both of these individuals would report directly to the Environmental/ Emergency Coordinator, who also would be the official contact with State and Federal radiological assessment personnel. The licensee has the ability to implement this monitoring program through the assignment of personnel from any of the other nuclear stations and has Letters of Agreement with Eberline, Hazelton and Science Applications Incorporated to provide additional personnel for monitoring and analysis if requested by the Environmental Director.

The personnel performing the sample collections and surveys would be using the EG procedures. This program could also include the Stations Environs Teams. These procedures, however, are currently not available to any Station Environs Teams. In addition, these procedures do not cover the method and instrumentation for radiation surveys, what instrumentation should be taken by each team, or survey/sample data collection forms. The Procedure EG-11 also describes how to collect all samples, but the title of this procedure makes no reference to this.

Based on the above findings, this portion of the licensee's program appears to be acceptable, but the following matters should be considered for improvement:

- Include a copy of all EGs in each Stations GSEP environmental supplies locker.

- Expand the EG procedures to include sample/survey data collection forms and a description of their use, and instrumentation needed.

5.4.3 Protective Actions

5.4.3.1 Radiation Protection During Emergencies

Although the licensee has prepared LZP 1360-1, Protective Measures for On-Site Personnel, this procedure primarily addresses only four areas: (a) emergency personnel radiation exposures, (b) when to take Potassium Iodine (KI) to reduce thyroid exposure, (c) where protective equipment is located, and d) how on-site personnel are to be assembled and evacuated. This last area is discussed in Sections 5.4.3.2 and 5.4.3.3.

The radiological protection sections of this procedure contain four major deficiencies. First, the procedure does specify emergency exposure limits, but it does not specify how personnel will be controlled to reach these limits, and not exceed them. This area must be addressed in an emergency radiation protection procedure to assure that once in a lifetime type exposure will not be repeated. Second, this procedure states that KI should be considered after personnel are subjected to a calculated dose of ten rem or greater to the thyroid, or are in airborne concentrations of I-131 greater than 10^{-5} uCi/ml for one hour. Once it is determined, based on calculations, that an individual will probably exceed ten rem to the thyroid, the KI should be administered. He should not wait until after being exposed, e.g., rescue personnel going into a high airborne area will probably exceed ten rem to the thyroid, and therefore, they should take KI prior to going into the area.

Third, the procedure does not specify under limitation/action that personnel allergic to iodide should not take KI. This should be addressed. Fourth, the procedure only specifies where protective clothing and respiratory equipment are located. It does not specify when they are to be used, i.e., action levels.

There is no overall procedure for radiation protection during an emergency. Procedures must be developed for radiation protection during emergencies that cover subjects such as how all health physics functions will be performed by RCT personnel; what priority will exist for the limited personnel available to provide access control; dosimetry; exposure control and dose assessment, especially for emergency levels; sampling, and surveying. Also, a method should be developed to guarantee that all emergency workers, such as contractors that will augment the onsite organization, will be provided instructions regarding radiological conditions.

Based on the above findings, the following deficiencies must be corrected to achieve an acceptable program:

- Procedures for radiation protection during an emergency must be developed.

- Provisions must be included in this procedure to prevent a repeat exposure to any overexposed emergency worker.

The following should be considered for improvement:

- Specify use of KI prior to actual exposure if possible.

- Include limitation/precaution that KI not be taken by persons allergic to iodide.

- Specify when protective clothing and respiratory equipment will be used.

5.4.3.2 Evacuation of Owner Controlled Area

Licensee will evacuate site personnel for a Site Area or a General Emergency unless radiological environmental conditions prohibit. The Station Director initiates the relocation of onsite personnel. Evacuation routes are shown on sketches in Procedure No. LZP 1360-1, Protective Measures For On-Site Personnel. Locations of assembly areas are also listed in this procedure. The Solid Radwaste Building has been designated as the main assembly area. A continuous two minute siren signals all personnel, except those with emergency responsibilities, to the assembly area. However, the procedure does not specify where essential emergency workers and managers will locate. Further, no radiation protection monitoring is provided at the assembly area.

Procedure No. LZP-1360-1 references the LaSalle Radiation Protection Procedures, LRPs, which include personnel monitoring/decontamination in several individual procedures.

Based on the above findings, improvement in the following area is required to achieve an acceptable program:

- A provision shall be placed in Procedure LZP-1360-1 designating an RCT or other qualified person be instructed to go to the assembly area for area monitoring when the evacuation and assembly alarm is sounded.

The following matter should be considered for improvement:

- Arrow signs should be placed in critical hallways and corridors leading to the emergency assembly area.

5.4.3.3 Personnel Accountability

The procedures covering personnel accountability were reviewed by the NRC inspectors. Procedure LZP-1170-1, Security Director Implementing Procedure provides for personnel accountability actions during an emergency. The Security Director accounts for all personnel within the protected area in the event of an onsite assembly of all personnel. He accounts for all individuals within the protected area at the time the assembly is announced and is responsible to ascertain the names of missing individuals within thirty minutes. Procedure LZP-1360-1 specifies that the list of essential personnel to remain onsite be relayed to a Senior Management person at the assembly area. This individual has not been identified by title. Non-essential personnel will proceed to the assembly area, and may be evacuated to either Dresden Station, Braidwood Station or the Streator Commonwealth Edison Office.

Based on the above findings, this portion of the licensee's program appears to be acceptable, but the following matters should be considered for improvement.

- A specific person, by title, should be designated as being in charge at the assembly area for onsite evacuations.

5.4.3.4 Personnel Monitoring and Decontamination

The appraisal team reviewed the licensee's procedures and interviewed the onsite Emergency Planning Coordinator (EPC). During the interview, the EPC stated that personnel monitoring and decomtamination procedures are listed in the LRPs, and were deemed adequate by the inspector.

It appears there is an adequate interface, by reference, between the licensee's LZPs and the routine radiation protection procedures (LRPs).

5.4.3.5 ONSITE FIRST-AID/RESCUE

The appraisal teams have reviewed the licensee's procedures regarding onsite first-aid/rescue. The procedures to be followed during a rescue are contained in LZP-1370-1; personnel injuries procedures are contained in LZP-1370-2; and first-aid and decontamination are covered by LZP-1370-3. In these procedures, the methods for receiving, recovering, transporting and handling of injured persons, who may be contaminated, are defined and

described. In addition, the procedures describe when offsite support facilities should be contacted. Radiation guidance is provided for the members of the rescue team. This guidance discusses who shall compose the team that will attempt a rescue in a high radiation area, the information that should be relayed to these individuals, and what protective actions the team members should take to limit their exposure.

Based on the above, this portion of the licensee's program appears to be acceptable.

5.4.4 SECURITY DURING EMERGENCIES

Appraisal team members interviewed the Site Security Director regarding the measures to be placed in effect during station emergencies. The Site Security Director informed the team members that all security procedures for assembly and accountability have not been developed or tested. These procedures will be developed prior to fuel load.

This is an Open Item and will be reviewed during a subsequent inspection.

5.4.5 Repair & Corrective Action

Repair and corrective action is not addressed with a specific Implementing Procedure. The Implementing Procedure for the Maintenance Director lists the specialist and experts in each field. Repair and corrective action will be directed by the Maintenance Director. There is no procedure in LZP series which specifically address safety consideration for repair or corrective action teams. This safety information should include the radiation safety and dosimetry aspects of each task and give attention to A.L.A.R.A. consideration in the planning. The responsibility for this is generally assigned to the Rad/Chem Director in LZP-1180-1 and in LZP-1360-1 protective measures for onsite personnel.

Based on the above finding, this portion of the licensee program appears to be adequate.

5.4.6 Recovery

The CCC Director (during limited activation) or the Recovery Group Manager (full activation) has the authority to deactivate the GSEP organization. The procedure used (either CC-1 or EOF-1) specifies that he will close out or recommend reduction in emergency classification by briefing NRC and the State of Illinois. For emergencies serious enough to activate the EOF, recovery operations will be directed from the EOF by the Recovery Group, under the management of the Recovery Group Manager. This is specified in procedure EOF-9, Recovery Operations. This procedure also specifies how the seriousness of the emergency classification is reduced, based on the evaluation of stabilized plant conditions in comparison with the Emergency Action Levels. The procedure also states that the emergency classification reduction is made after consultation among NRC representatives, state officials, company officials, and the NSSS Vendor. The positions in the Recovery Group are shown in Figure 2.3 as being located at the Nearsite EOF.

Based on the above findings, this portion of the licensee's program appears to be acceptable.

5.4.7 Public Information

The inspectors reviewed the CCC Information Directors procedure (CC-4) and the Emergency News Center Director procedure (EOF-04) to verify adequate scope and content. The Information Director (ID) is responsible for collecting, verifying and disseminating information on emergency situations to the public via the news media. The ID functions under the direction of the CCC Intelligence Director. Upon activation of the Nearsite EOF, the CCC Information Director will support the Emergency News Center Director.

Major duties of the Information Director include: determining the nature of the emergency from station personnel and determining its potential effect on the public; issuing approved press releases; coordinating the release of information with other involved agencies; and disseminating internal information to cognizant licensee emergency personnel.

Major duties of the Emergency News Center Director at the EOF are: Scheduling and presiding over press conferences or briefings and having available a technical spokesperson; coordinating information releases with Federal, State and local agencies, as well as other companies involved in the emergency; responding to information requests from the news media, including arranging interviews; and establishing coordinated arrangements for dealing with rumors.

Walkthroughs with most CECO public information personnel indicated an adequate knowledge and level of training to perform their assigned task during an emergency. However, one public information person was not familiar with their role. This was discussed with the licensee.

Based on the above findings, this portion of licensee's program appears acceptable

5.4.8 Fire Protection

The inspectors examined several fire preplans to determine if these procedures would key the user to the Emergency Plan. The preplans do not adequately interface with the Emergency Plan. The preplans should indicate to the user if the fire can affect safe shutdown equipment and thus request the user to notify the Shift Engineer of a possible Emergency Plan condition and request him to classify the emergency as per LZP 1200-1.

Several preplans which were examined clearly indicate what safety related equipment can potentially be affected by the fire. The preplans are streamlined and easy to read. Adequate human engineering factors have been applied.

The inspectors discussed the above noted deficiency with a licensee fire protection engineer. The licensee agreed with the inspector's concern and indicated that these fire preplans which identify safe shutdown equipment will be revised.

The inspector stressed that preplans which affect unit shutdown due to the implementation of a Technical Specification (T/S) ACTION statement should be identified and those preplans which require plant shutdown due to implementation of a Limiting Condition for Operation (LCO) should be identified.

Walkthroughs with some Shift Engineers and Shift Foremen (Fire Brigade Chief) indicated that it is difficult to determine from the fire alarm panel in the Control Room whether the fire can or can not affect safe shutdown equipment.

Those interviewed agreed that streamlined fire preplans would be useful and agreed that the preplan should indicate whenever possible, what type of GSEP classification they may be in or approaching.

Based on the above findings, the following improvements are required to achieve an acceptable program:

- The licensee should review all fire preplans and determine which preplans should include statements to request the Shift Engineer to classify this emergency in accordance with LZP 1200-1.

5.5 Supplemental Procedures

5.5.1 Inventory, Operational Checks and Calibration of Emergency Facilities and Supplies

The licensee has developed a set of procedures (LZP-1550 series) to assure that all equipment and supplies are at their designated locations. These procedures cover the supplies and equipment that are to be located in the first aid kits, first aid cabinets, the environs team equipment lockers, St. Mary's Hospital, decontamination facility, TSC, EOF, and OSC. The procedures specify the frequency by which these inventories are performed, and specify that calibrated instrumentation will be replaced with newly calibrated equipment at the time of the inventory. In addition, this series of procedures also describes the frequency for testing the NARS telephone system, and the surveillance of the special TLDS.

Although these procedures include a checklist to be used to verify that all equipment and supplies are present, several of the procedures (in particular LZP-1550-1, LZP-1550-5, LZP-1550-6, and LZP-1550-9) do not include a provision for the replacement of missing equipment.

The checklists described in the LZP-1550 series procedures are maintained by the Rad/Chem Supervisor, who is administratively responsible for keeping these inventoried supplies current.

LZP-1550-7 specifies that the inventories of the EOF will be done on a monthly basis after the EOF has been activated. This procedure should be revised to specify a monthly inventory regardless of whether the EOF has been activated.

Based on the above findings, this portion of the licensee's plan appears to be acceptable, but the following should be considered for improvement:

- Procedure LZP-1550-1, LZP-1550-5, LZP-1550-6, and LZP-1550-9 should also specify how missing supplies will be replaced.

- Procedure LZP-1550-7 should specify monthly surveillance irregardless of whether or not the EOF has been activated.

5.5.2 Drills and Exercises

Drills and exercises are administered by the Radioecology/Emergency Planning Supervisor and his staff. Procedure No. CC-13, The Exercise and Drill Program, describes the program which implements the requirements in the GSEP. Written scenarios are prepared for each exercise as stipulated in the procedure. Exercises are coordinated with appropriate state and local agencies. Critiques are conducted as soon as possible after each exercise to evaluate the adequacy of procedures and capabilities of the station involved.

Provisions in the GSEP, Section 8.3, Exercises and Drills, provides for an exercise to be conducted every sixth year on each of the two backshifts. Management controls to assign responsibility for corrective action are being made. An action item tracking system was utilized by licensee management to followup on corrective actions recommended as a result of the December 4, 1980, exercise by the licensee. Documentation of this was observed by the inspector.

Procedure No. CC-13, includes the requirements for frequency of the following drills and exercises:

Quarterly Communications drill, quarterly Fire drill, annual Medical drill, annual Radiological Monitoring drill, semi-annual Health Physics drill, and an annual Exercise.

Based on the above findings, this portion of the licensee's program appears to be adequate.

5.5.3 Reviews, Revision and Distribution of Emergency Plan and Procedures

The station procedures are prepared or revised in accordance with administrative Procedure LAP-820-2. Attachment A of this procedure identifies the following:

The originator, Procedure No., Revision No., date the originator signs the pending procedure, the description of the procedure and the department head approval. Further, onsite reviews and required approvals are identified by check marks next to the position title. The determination of who approves each type of procedure is addressed in this procedure. Distribution of procedures is determined in accordance with LAP-820-3.

In an interview with the office supervisor, she clearly defined the approval mechanism and the mechanism for determining the onsite and offsite distribution.

Corporate Emergency procedures are prepared by cognizant corporate staff, reviewed by the Radioecology/Emergency Planning Supervisor, and approved by the Division Vice President Nuclear Stations.

Based on the above finding, this portion of the licensee's program appears to be acceptable.

5.5.4 AUDITS of Licensee Emergency Preparedness Program

The Quality Assurance Department for the LaSalle Station audits at least annually, the emergency plan and implementing procedures for the LaSalle Station. The QA audits include emergency equipment and discussions with personnel. The QA Department audit, the performance of personnel and adequacy of procedures during drills and exercises, independent of the personnel assigned to implement the drill or act as monitors.

The Corporate Quality Assurance Department interfaces with the Station Quality Assurance Department and monitors their performance. The Corporate QA Department tracks the deficiencies and items requiring corrective action that are not addressed in the specified time allowed. The Corporate Manager of Quality Assurance communicates with the Station Manager to insure that the required action is implemented.

The Station Manager of Quality Assurance was interviewed by the inspector. The QA Manager was able to produce completed audits from their files showing audits of the Emergency Plan, implementing procedures and the training program and records.

He provided records of the December 1980, exercise and corrective actions requested and the tracking of this action to ensure that correction was implemented. A program by the Quality Assurance Department has not been formalized to determine the effectiveness of Station training.

Based on the above finding, the licensee program appears to be satisfactory, however, assessment of the effectiveness of training should be implemented.

5.6 Human Factors Engineering

The inspectors observed several areas of impediment for the user of the Emergency Plan Implementing Procedures (EPIPs). These were discovered as part of walkthrough exercises of the Shift Engineers. Impediments in the areas of classifing emergency conditions and making appropriate recommendations were identified. The licensee's EPIPs are not tabbed for quick access of critical EPIPs such as; (1) emergency classification, (2) Notification and (3) the Station Director emergency procedure.

Decisional aids attached or referenced in the EPIPs were not readily available and caused unnecessary time delays in decision making. These aids included; (1) evacuation map of the ten mile EPZ in standard sector (A thru P) nomenclature; (2) core damage assessment graph relating containment radiation reading (R/hr) Vs. estimated number of curies in containment; (3) color coding of the station vent effluent monitor and Standby Gas Treatment Monitor corresponding to EALs for declaring Alert, Site Area, or General Emergencies.

The inspector discussed the above recommendations with the licensee and suggested these human factors engineering items be considered. The licensee indicated that these aids are available either in the Emergency Plan or procedures but agreed with the inspector relevant to quick access of the aids.

Based on the above findings, the following human factor engineering should be considered for improvement:

- Ten mile EPZ map (laminated in plastic) should be readily available to the Shift Engineer. This map should be labeled in standard sector nomenclature.

- Critical EPIPs (LZPs) and Emergency Operating Procedures (LOAs) which will be used to classify an accident, make appropriate notification, and recommendations should be red tabbed for quick access. Those LOAs which will direct the Reactor Operator to notify the Shift Engineer of an Emergency Plan situation should also be red tabbed.

- The core damage assessment graph(laminated in plastic) should be located next to the instrument readout of the containment high range radiation monitor (10^8 R/hr) in the Control Room. The graph should be color coded on the bottom to aid the user in determining which emergency class he may be approaching (i.e., green-normal, yellow-Alert, orange-Site Area, red-General).

- Color coding of critical effluent monitors should be considered to the same extent as the critical reactor process monitors are done. As a minimum, SBGT and station vent effluent monitors should be color coded.

6.0 COORDINATION WITH OFFSITE GROUPS

6.1 Offsite Agencies

St. Mary's Hospital, Streator, Illinois

NRC inspectors visited St. Mary's Hospital on April 23, 1981, to interview hospital personnel and tour the facility.

The LaSalle County Station has a letter of agreement with St. Mary's Hospital. St. Mary's Hospital has agreed to provide medical care to injured personnel who are overexposed or may be contaminated with radioactivity. The hospital is equipped and has facilities and supplies to handle and give medical treatment to radioactively contaminated injured personnel.

The hospital personnel expressed an understanding of their responsibilities and procedures in response to an emergency situation involving radioactively contaminated injured personnel. The facilities, supplies and medical staff provided by the hospital were consistent with the letter of agreement mentioned above.

The licensee has contacted the hospital to participate in drills and exercises scheduled by the licensee. Actual cases of injured personnel from the licensee's facility have been treated by the hospital.

A copy of the GSEP is maintained in the Hospital Assistant Administrator's Office. The Hospital Assistant Administrator was satisfied with the coordination efforts of the licensee with respect to communication and notifications, and routine planning information exchange. However, hospital personnel expressed their concern about not knowing how to use the radiation detection and measurement equipment which is in inventory at the hospital. Hospital personnel indicated the licensee may provide training for them on instrumentation this summer.

St. Mary's Hospital has facilities and supplies to handle one contaminated injured patient and could possibly handle two at a time. The backup hospital for LaSalle is the Northwestern Hospital. Due to the distance into the north side of Chicago, the location of Northwestern Hospital, this may prove impractical in cases of multiple contaminated injuries. It is recommended that letters of agreement with the LaSalle Station and other nearby hospitals be considered, e.g., the hospital used for Dresden Station.

Based on the above findings, this portion of the licensee's program appears to be acceptable.

LaSalle County Sheriff

NRC inspectors visited the LaSalle County Sheriff's office on April 23, 1981, to interview personnel and tour the Sheriff's facilities.

The Sheriff's office personnel were aware and expressed an understanding of their responsibilities and procedures in response to an emergency at the LaSalle County Station. Their understanding was consistent with the expectations of both parties as expressed in the letter of agreement dated May 15, 1980, and the licensee's procedures. The Sheriff's personnel responded quickly and correctly to questions asked pertinent to providing emergency assistance to the licensee.

Based on the above findings, this portion of the licensee's program appears to be acceptable.

Grand Ridge Fire Department and Ambulance Service

The Grand Ridge Fire Department, a volunteer group, has a letter of agreement with the LaSalle County Station dated May 15, 1980. NRC inspectors interviewed the Fire Chief and the President of the Grand Ridge Fire Department, toured their facilities and observed their fire fighting equipment. Two ambulances are also available for transporting injured personnel.

Personnel interviewed indicated they have had no formal training from the licensee, but they have participated in drills and an exercise conducted by the licensee.

This volunteer fire department is third to be called to a fire at the licensee's site. The first and second to be called are Marseilles Fire Department and Seneca Fire Department, respectively, however due to terrain, road condition and the most direct route they can respond the most promptly.

Grand Ridge Fire Department Ambulance Service is second to be called. The Seneca Fire Department Ambulance Service would be called first.

It was learned, during interview, that Grand Ridge Fire Department may have its self contained breathing apparatus (SCBA) tanks recharged at the LaSalle County Station during an emergency to which they are responding. Grand Ridge Fire Department has supply tanks on their SCBA, which have a capacity of 2200 psig while the capacity of the LaSalle County Station equipment is 4300 psig. Although the pipe fittings are compatible and a precaution is given in the licensee's procedure for recharging tanks, LRP 1310-9, the possibility of recharging of Grand Ridge Fire Department SCBA supply tanks beyond their capacity exists during an emergency. It is recommended that the licensee modify LRP 1310-9 to include a precaution against this possibility written in bold print

Based on the above findings, this portion of the licensee's program appears to be acceptable, but the following should be considered for improvement:

- Modify LRP-1310-9 to add the precaution in bold lettering and box to preclude recharging Grand Ridge Fire Department self contained breathing apparatus supply tanks beyond the 2200 psig capacity, and further, a reducing regulator should be obtained.

6.2 General Public and Transient Population

Emergency information pamphlets on "What To Do In Case Of An Emergency At The LaSalle Nuclear Station" has been disseminated to the general permanent population within the ten mile EPZ. The licensee indicated some minor feedback was received about the pamphlets. Some persons requested additional copies, but few negative comments were received relevant to the contents of the pamphlets.

CECo plans to conduct an attitudinal survey to determine the success or failures of the program. Feedback relevant to the pamphlets may be used for changes.

District CECo Superintendents were instructed to deliver emergency information pamphlets to major businesses where a reasonable number of transient workers are expected.

Numerous business establishments including restaurants and city halls within the ten mile emergency planning zone were visited by the NRC inspectors to determine if the Emergency information pamphlets had been distributed. Of all the establishments visited, only one had a supply

of the pamphlets, the Grand Ridge Post Office. Emergency planning information has not been made available by dissemination to the transient population within the plume exposure zone, nor by posting in public places.

The brochure is in a form, a booklet, that is likely to be available to a resident during an emergency if the residents heed the message in the instruction from CECo in the letter to the resident.

Based on the above findings, the following matters should be considered for improvement:

- The public information brochure should be disseminated to city halls, state parks, camp grounds, marinas and other areas where the transient population within the ten mile EPZ may obtain a copy.

- Posting the public information brochure in public places.

6.3 NEWS MEDIA

The inspectors discussed the current news media program established by CECo relevant to disseminating and coordinating accurate information to news media organizations. At the December 4, 1980, LaSalle exercise, Reporter's Guide brochures were distributed to all reporters in attendance. These guides cover the following subjects: operating cycle of a BWR, radiation, emergency planning, training, and a glossary of common reactor/radiation terms. The licensee indicated that the Reporter's Guide will be disseminated to other local radio/tv/newspaper media personnel.

Training for media personnel will be conducted by the licensee in the summer of 1981. Special press days for briefing and tours is also currently scheduled.

The inspectors found an adequate news media information and training program exists.

6.4 Contractors and Vendors

The inspectors discussed the functions and tasks of the NSSS vendor (General Electric) with the onsite GE Operations Manager at the LaSalle Site. GE will provide within 24 hours, a team of experts to assist and support the licensee. GE maintains a 24 hour per day duty system for rapid activation of the service. Further, an analysis support group in San Jose, California will assist the licensee and the GE team.

During LaSalle startup, GE site representatives will be maintained. However, after commercial operation of the LaSalle units, these representatives are not currently scheduled for routine onsite availability.

Letters of Agreements and Understanding with GE have been executed and provide the necessary information. The EOF Recovery Manager's Support

Staff has procedures for coordinating advisory support such as GE. In addition, support and advice functions from Institute of Nuclear Power Operations are coordinated and procedures are established to ensure this.

The inspectors found an adequate interface for emergency response for contractors and vendors.

7.0 DRILLS AND EXERCISES

The appraisal team interviewed cognizant individuals at both the corporate and site level regarding the administration of drills, exercises and critiques. Corporate is responsible for designing the drills and exercises. Corporate also correlates critique information and submits this information to the Station Director for corrective action. The Station Director then delegates an individual to ensure that the deficiencies are addressed and a report sent to Corporate outlining the corrections.

Site medical drills are conducted by Radiation Management Corporation (RMC). RMC submits video tapes of the drill and a critique to the site Director and Corporate during the site exit interview. The medical drill input is the only direct input at the site level. Corporate identifies all other drill and exercise problems and performs the quality assurance to ensure that drill and exercise deficiencies are corrected. Site quality assurance has no direct function in corrective action followups on drill and exercise deficiencies.

Based on the above findings, this portion of the licensee's program appears adequate

7.1 ONSITE/OFFSITE DRILL DURING APPRAISAL

During the Emergency Preparedness Onsite appraisal, the licensee conducted an Environmental Monitoring Drill, April 29, 1981. One member of the appraisal team accompanied each of the two monitoring teams. The appraisal team members noted the following problems:

- During the drill neither team followed station procedures, and the correct procedures were not provided in the locker.

- There were no checklists available stating what equipment should accompany the environmental monitoring team, therefore one team forgot to load all necessary equipment.

- The Environmental Directors (ED) had not received training in their positions.

Observation of the practice drill reinforced the appraisal teams findings that additional, indepth training for these personnel is needed and revised training program standards need to be developed. The scope and content of ED training must be revised to include extensive walkthrough training (table top test) to fully understand their procedures.

8.0 Licensee Action on Previous Identified Items Related to Emergency Preparedness (IE Inspection Reports No. 50-373/80-47; 50-374/80-29; and 50-373/80-53)

For the purposes of tracking, all of the following previously identified open items are considered closed, and those items not completed have been reopened in this report. These previously identified items are as follows:

- Obtain Letter of Agreement from the Streator Medical Clinic (373/80-47-01; 374/80-29-01).
- Complete inventory of emergency equipment and supplies and locate this equipment (373/80-47-02; 374/80-29-02).
- Installation of the basic offsite dose calculation system to provide current and historical meteorological information to the Corporate Command Center
- Complete emergency planning training to licensee personnel.
- Complete the following LZPs: 1550-1, 1550-2, 1550-3, 1550-5, 1550-6, 1550-7, 1550-8, 1550-9 (373/80-47-06; 374/80-29-06), 1120-1 (373/80-47-03; 374/80-29-03), 1200-2 (373/80-47-04; 374/80-29-04), 1220-4 (373/80-47-05; 374/80-29-05), and the 1330 series for post accident sampling (373/80-47-07; 374/80-29-07).
- Test the public address and alarm system during a drill (373/80-53-01).
- Install and test the post-accident sampling system equipped with remote handling devices (373/80-47-08; 374/80-29-08; 373/80-53-02).
- Conduct a site assembly drill to test personnel accountability and site evacuation procedures (373/80-53-03).

9.0 PERSONS CONTACTED

CECo LaSalle Station

F. Palmer, Division Vice President Nuclear Stations (CECo)
*R. Holyoak, LaSalle County Station (LSCS) Superintendent
*G. Diederich, Operations, Assistant Superintendent (LSCS)
*L. Del George, Nuclear Licensing, CECo
*R. Bishop, Assistant Superintendent Administration (LSCS)
*C. Schroeder, Technical Staff Supervisor (LSCS)
*J. Golden, Radioecology/Emergency Planning Supervisor (CECo)
*W. Brenner, Lead Emergency Planner (CECo)
*F. Lawless, Rad/Chem Supervisor (LSCS)
*J. Lewis, GSEP Coordinator (LSCS)
*Jim McDonald, Training Supervisor (LSCS)
*R. Kyronoc, Lead QA Inspector (CECo)
K. Weaver, Emergency Planning Staff (CECo)
G. Fitzpatrick, Training Department Manager (CECo)
W. Schewski, QA Manager (CECo)

S. Johnson, System Load Dispatcher (CECo)
J. Coonan, Superintendent of Maintenance (LSCS)
T. Mayer, Maintenance Staff Assistant (LSCS)
R. Pavlick, HP/Rad Waste Manager (CECo)
J. Hogan, Public Information Staff (CECo)
B. Arnold, Public Information Staff (CECo)
W. Harrah, Public Information Staff (CECo)
L. Scott, Public Information Staff (CECo)
R. Raguse Operations Director (LSCS)
B. Sly, Shift Engineer (LSCS)
J. Pearson, Shift Engineer (LSCS)
R. Allen, Shift Engineer (LSCS)
J. Schmeltz, Shift Engineer (LSCS)
P. Sprole, Shift Foreman (LSCS)
B. Wolf, Shift Foreman (LSCS)
M. McQuade, Shift Foreman (LSCS)
J. Shetlerly, Shift Foreman (LSCS)
T. Shafer, Shift Foreman (LSCS)
P. Shields, Shift Foreman (LSCS)
C. Settles, Shift Control Room Engineer (LSCS)
J. Klika, Shift Control Room Engineer (LSCS)
J. Atchley, Shift Foreman (LSCS)
R. Frederick, Stores Director (LSCS)
P. Welsh, Administrative Director (LSCS)
T. Borzym, Security Director (LSCS)
G. Shearer, Rad/Chem Director (LSCS)
L. Aldrich, Environs Director (LSCS)
L. Bryant, Environs Director (LSCS)
P. Manning, QC Supervisor (LSCS)

In addition to the above individuals, several Rad/Chem Technicians were interviewed.

*Denotes those present at the exit interviews

NON CECO EMPLOYEES

G. Phillips, Undersheriff, Grundy County
C. Leach, Emergency Preparedness Coordinator, Grundy County
K. Mack, Dispatcher, Grundy County
C. Cook, Dispatcher, Grundy County
T. Templeton, Assistant Emergency Director, LaSalle County
T. Reynolds, Dispatcher, LaSalle County
V. Hegland, Dispatcher, LaSalle County
P. Burke, Dispatcher, LaSalle County
W. Gatza, Lock Master, U.S. Corps of Engineers
W. Menke, Hospital Administration, St. Mary's Hospital
C. Jaegle, Chief Nurse, Emergency Room, St. Mary's Hospital
T. Jaegle, Chief, Grand Ridge Fire Department
J. Heth, President, Grand Ridge Fire Department
M. Johnson, Chief, Marseilles Fire Department
P. Reching, Assistant Chief, Marseilles Fire Department
L. Panti, Assistant Chief, Marseilles Fire Department
K. Brown, Operations Manager, General Electric Company

10.0 Exit Interview

The inspectors and senior management from headquarters and the region met with licensee representatives (denoted in Paragraph 9) at the conclusion of the appraisal on May 1, 1981 The inspectors summarized the scope and findings of the appraisal. A detailed technical exit was also conducted at the conclusion of the appraisal with licensee representatives of those technical areas which needed improvement.

ANNEX A

FIGURES

FIGURE 2.1

GSEP STATION GROUP ORGANIZATION

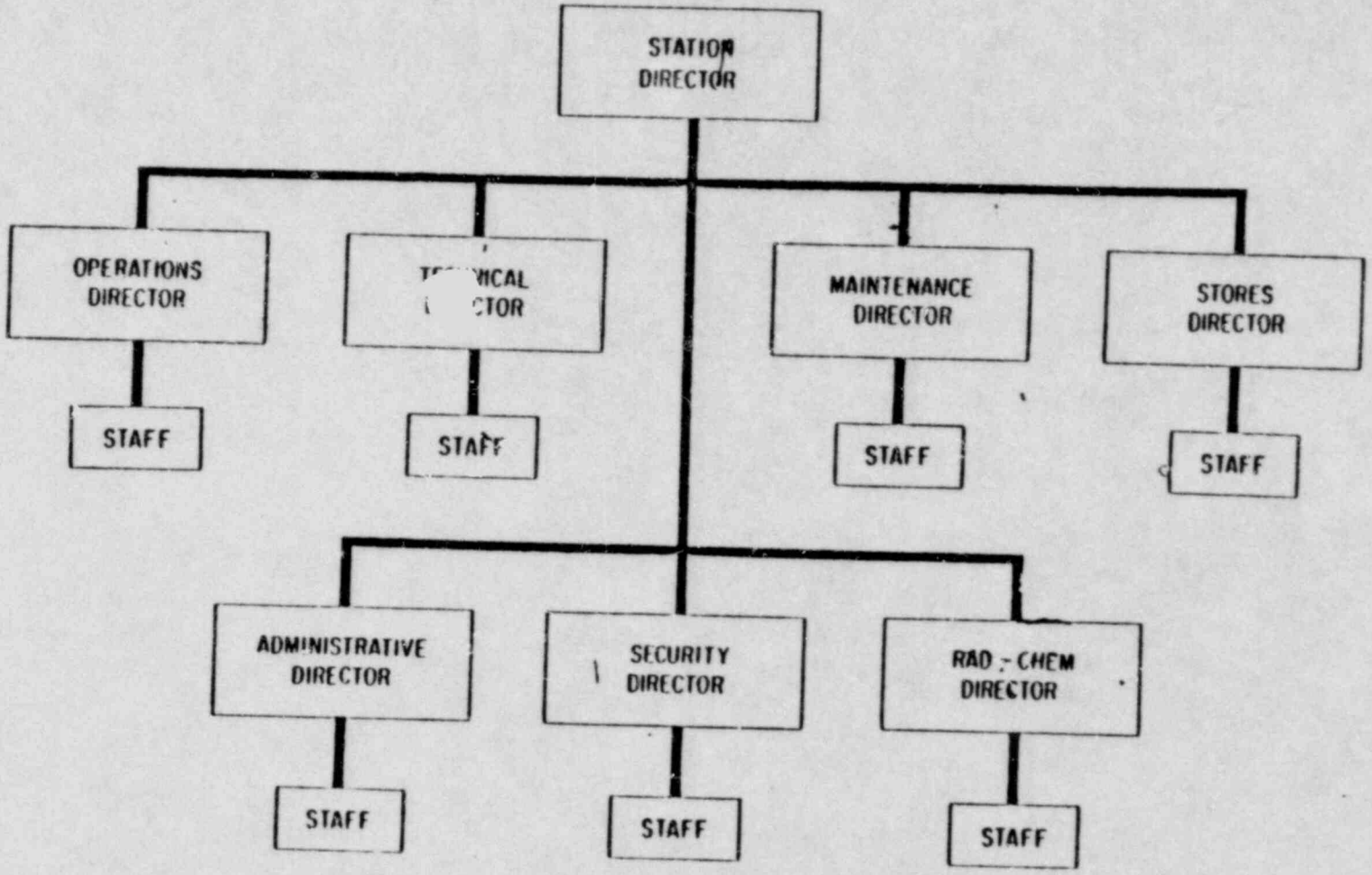

FIGURE 2.2

LIMITED RESPONSE OFFSITE GSEP ORGANIZATION

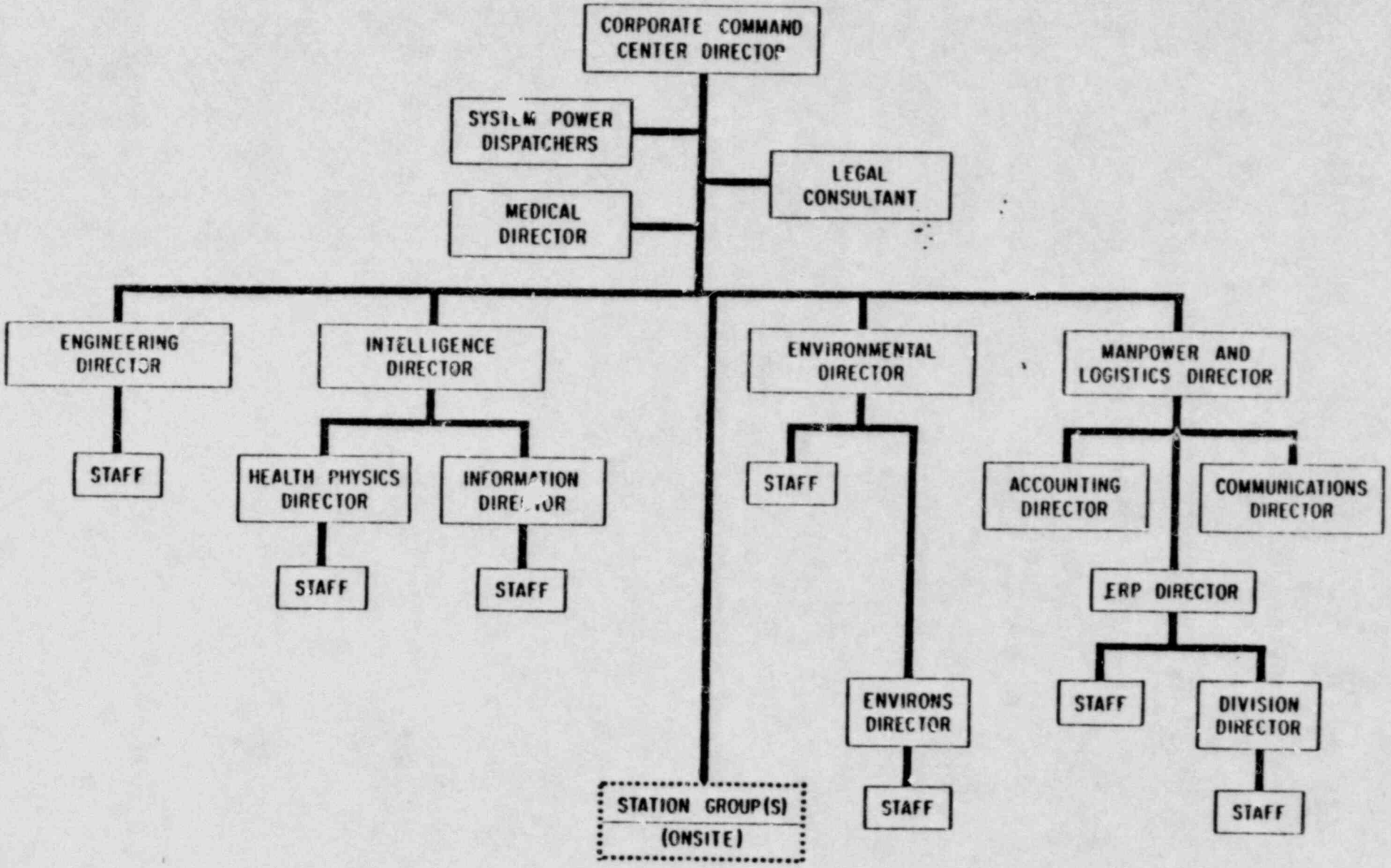

FIGURE 2.3

FULL RESPONSE OFFSITE GSEP ORGANIZATION

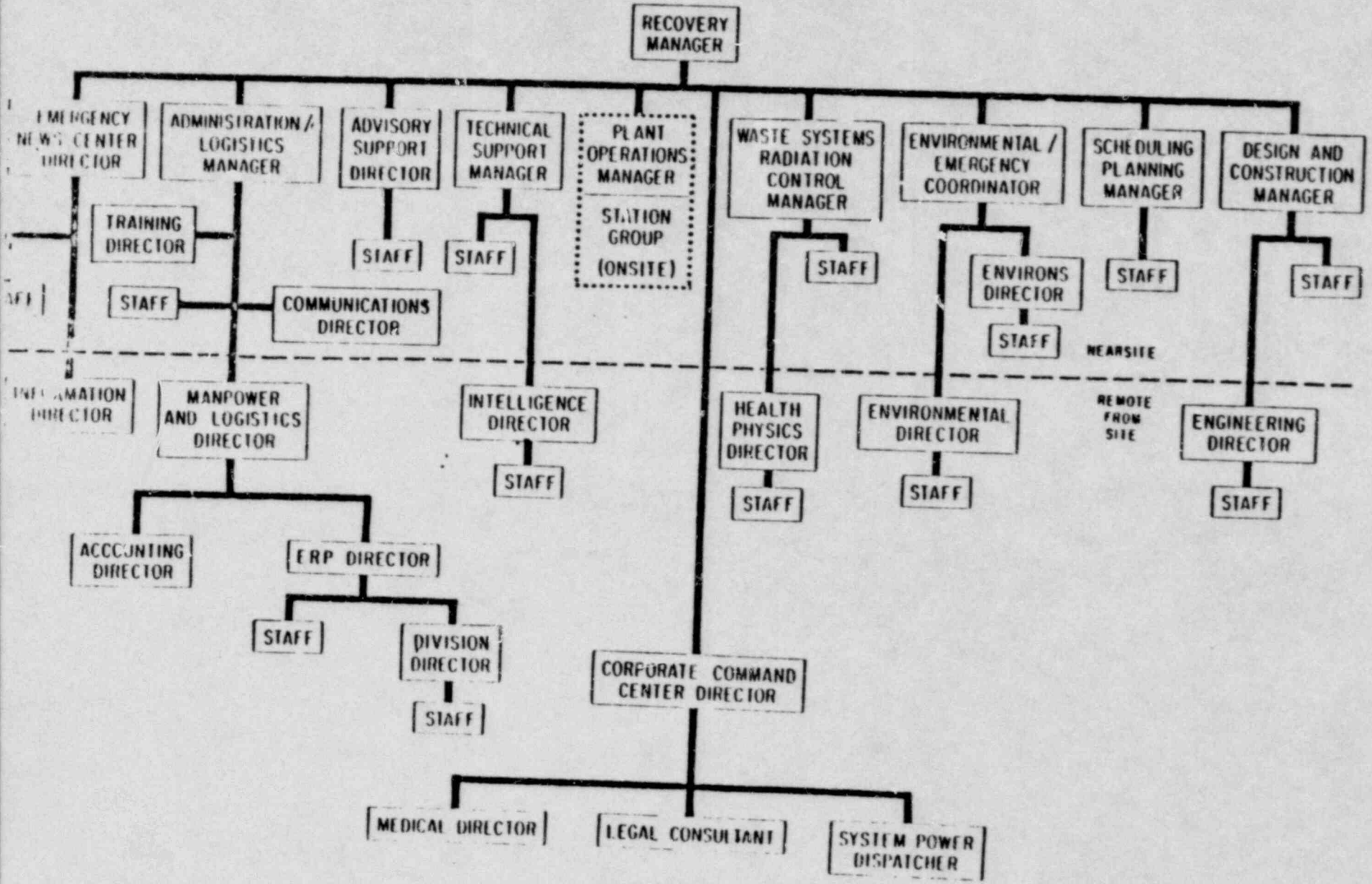

FIGURE 5.4

SIMPLIFIED EMERGENCY NOTIFICATION SCHEME