U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Report No. 50-346/82-01(DEPOS)

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Licensee: Toledo Edison Company
300 Madison Avenue
Toledo, OH 43652

Facility Name: Davis-Besse, Unit 1

Inspection At: Oak Harbor, OH

Inspection Conducted: February 8-19, 1982

Inspectors: for W. B. Grant (Team Leader) March 16, 1982

for J. P. Patterson March 16, 1982

for R. M. Lickus March 22, 1982

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Emergency Preparedness and
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Inspection Summary

Emergency Preparedness Appraisal on February 8-19, 1982 (Report No. 50-346/82-01(DEPOS))

Areas Inspected: Special announced appraisal of the state of onsite emergency preparedness at the Davis-Besse Nuclear Power 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, Drills, and Walk-throughs. The inspection involved 575 inspector-hours onsite by three NRC inspectors and two consultants.
Results: No items of noncompliance or deviation were identified; however, several significant findings were identified in the area of procedures (Section 5).

1.0 Administration of Emergency Plan

1.1 Responsibility Assigned

Responsibilities at the Corporate level for emergency planning are assigned to the Vice President, Nuclear. The Emergency Planning and Preparedness Supervisor (EPPS) coordinates the emergency preparedness program at both the corporate and station levels, including the development and periodic updating of the Corporate and Station Emergency Plans and supporting procedures. The EPPS has a staff consisting of one Associate Technical Assistant and one Senior Technical Assistant. The Davis-Besse Nuclear Power Station Emergency Plan is updated annually by the Emergency Planning and Preparedness personnel.

1.2 Authority

Corporate management is supportive of the emergency preparedness effort. Personnel who are assigned emergency functions are given the authority to perform those assigned duties. The onsite emergency organization is directed and controlled by the Vice President, Nuclear, who becomes the Operations Director. The Davis-Besse Nuclear Power Station Emergency Plan, however, does not clearly indicate who is in charge of emergency operations at all times. Section 5, Part 5.2, Page 5-4, indicates that the "assignment of responsibilities in the onsite emergency organization is ultimately the responsibility of the Station Superintendent." Section 5, Part 5.2.1, Page 5-5 states that, "In the case of a General Emergency and full implementation of the provisions of this plan, the Onsite Emergency Organization reports to the Operations Director, a member of the Offsite Emergency Organization..." Additionally, Section 5, Figure 5-3, Page 5-30 shows a chart of the Onsite Emergency Organization with the Operations Director at the top of the organization supported by an Emergency Operations Manager (Nuclear Services Director), a Planner and Scheduler (Site Engineering Manager), and a Stations Operations Manager (Station Superintendent) all on an equal level. If the Operations Director is only functional for General Emergency Classifications, the plan should detail who is in charge of site operations for Site Area Emergencies, Alerts, and Unusual Events.

1.3 Coordination

The Emergency Planning and Preparedness Supervisor (EPPS) is responsibile for coordination of the Davis-Besse Nuclear Power Station Emergency Plan with offsite groups including state and county authorities. The EPPS also ensures the coordination of corporate and station planning activities.

1.4 Selection and Qualification

Selection criteria are established for the Emergency Planning and Preparedness Staff. Management and operational personnel at the Davis-Besse Nuclear Power Station follow the selection criteria as outlined in ANSI N18.1.

Based on the above findings, these portions (1.1, 1.2, 1.3, and 1.4) of the licensee's program appear to be acceptable; however, the following matter should be considered for improvement:

- Identify who is specifically in charge of emergency operations when the Operation Director is unavailable (during any emergency classification, be it Unusual Event, Alert, Site Area Emergency, or General Emergency).

2.0 Emergency Organization

2.1 Onsite Emergency Organization

The inspectors verified that an effective emergency organization was in place by a review of the emergency organization and responsibility assignments described in the Emergency Plan and Procedures. The structure of the onsite emergency organization is provided on the organization chart in Figure 2.1.

The Shift Supervisor on duty becomes the interim Emergency Duty Officer when an emergency condition exists and is in control of the onsite emergency organization until relieved by the Emergency Duty Officer. The Operations Director (Vice President, Nuclear) directs the onsite emergency organization from the Emergency Control Center. The Station Operations Manager (Station Superintendent) controls the Technical Support Center until the Onsite Assessment Manager arrives. The Station Operations Manager is also responsible for activating the emergency notification system and assigning staff to all emergency response functions. The personnel who are to serve in key onsite emergency management positions have been predesignated by positions, along with one alternate. The selection of technical individuals who would support these managers has not been formalized, but would be based on the normal working duties of these individuals.

The inspectors interviewed personnel who are designated to act as onsite emergency managers and alternates. All personnel were found to be aware of their emergency responsibilities and authority, and had a working knowledge of the emergency plan and procedures for which they are responsible.

A suggestion was made to station personnel to change the activation requirements in the TSC Activation Procedure (EI 1300.07) and to add a description of the functions of the Onsite Assessment Manager. Both of these changes were made prior to the appraisal team departure.

The Davis-Besse Nuclear Power Station onsite emergency organization calls for two individuals (the Plant Operations Manager, and the Plant Operations Engineer) to report to the Control Room during an emergency. Section 5.2.2.1 of the Emergency Plan defines the role of the Plant Operations Manager as supervising and directing plant operations. Similarly, the Operations Engineer is given the responsibility of supervising control room activities. The plan indicates that the Shift Supervisor reports to the Operations Engineer. During the interviews with these personnel, it was made clear that the Shift Supervisor is the individual who is in charge of control room activities and that the Plant Operations Manager and the Operations Engineer were there to assist the Shift Supervisor in control room operations and accident mitigation.

Based on the above findings, this portion of the licensee's program is acceptable; however the following Emergency Plan items must be corrected. These items are also listed in Appendix C of this report:

- In Figure 5-3, of the Emergency Plan, Onsite Emergency Organization, change the location indicated for the Operations Director from Edison Plaza to Emergency Control Center.

- In Section 5.2.2.1 of the Emergency Plan, revise the description of responsibilities for the Plant Operations Manager and the Operations Engineer to reflect a concept of supporting and advising the Shift Supervisor so that no confusion exists regarding who is in charge of control room activities.

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 Emergency Director (President) who initiates the notification procedures for the Corporate radiological emergency response. The Emergency Director will activate the corporate personnel shown in Figure 2.2 depending upon the nature and severity of the incident. If a Site Area Emergency or General Emergency is declared, full activation of the corporate response organization will assure maximum support of the onsite emergency organization. A primary and alternate line of succession exists for each offsite emergency response position. The selection of these personnel is based upon the normal working duties of these individuals and the standards developed by the Institute of Nuclear Power Operations (INPO). A position description has been developed for each of the corporate radiological emergency response personnel.

Supporting contractors and vendors are specified in the Emergency Plan. The main responsibilities for offsite Directors and Managers include: overall management of the emergency; public information; systems engineering; interaction with offsite agencies; manpower and logistical support; legal support, and security.

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

- The licensee should procedurally specify how the corporate response organization will be mobilized. Sufficient personnel are available to accomplish this, but no detail presently exists in their notification procedures.

2.2.2 Onsite Emergency Organization

The Shift Supervisor is responsible for assuming the duties of interim Emergency Duty Officer (EOD) until relieved by the assigned EDO. The Shift Supervisor is instructed to contact the Station Superintendent who can authorize the Shift Supervisor to tape an announcement and activate the pagers of key emergency response personnel. At the present time, 12 individuals are listed as carrying pagers. These 12 individuals are instructed in the Emergency Implementing Procedures to call in or notify additional personnel as required to provide adequate response to the event. A list of supporting personnel along with their home telephone numbers is identified in the Supporting Procedures. The personnel identified on this list have all of the necessary expertise required to meet the design goals of Table B-1 of NUREG-0654. The list, however, has not been prioritized nor have instructions been developed to ensure that those positions identified by Table B-1 are augmented within 30-60 minutes.

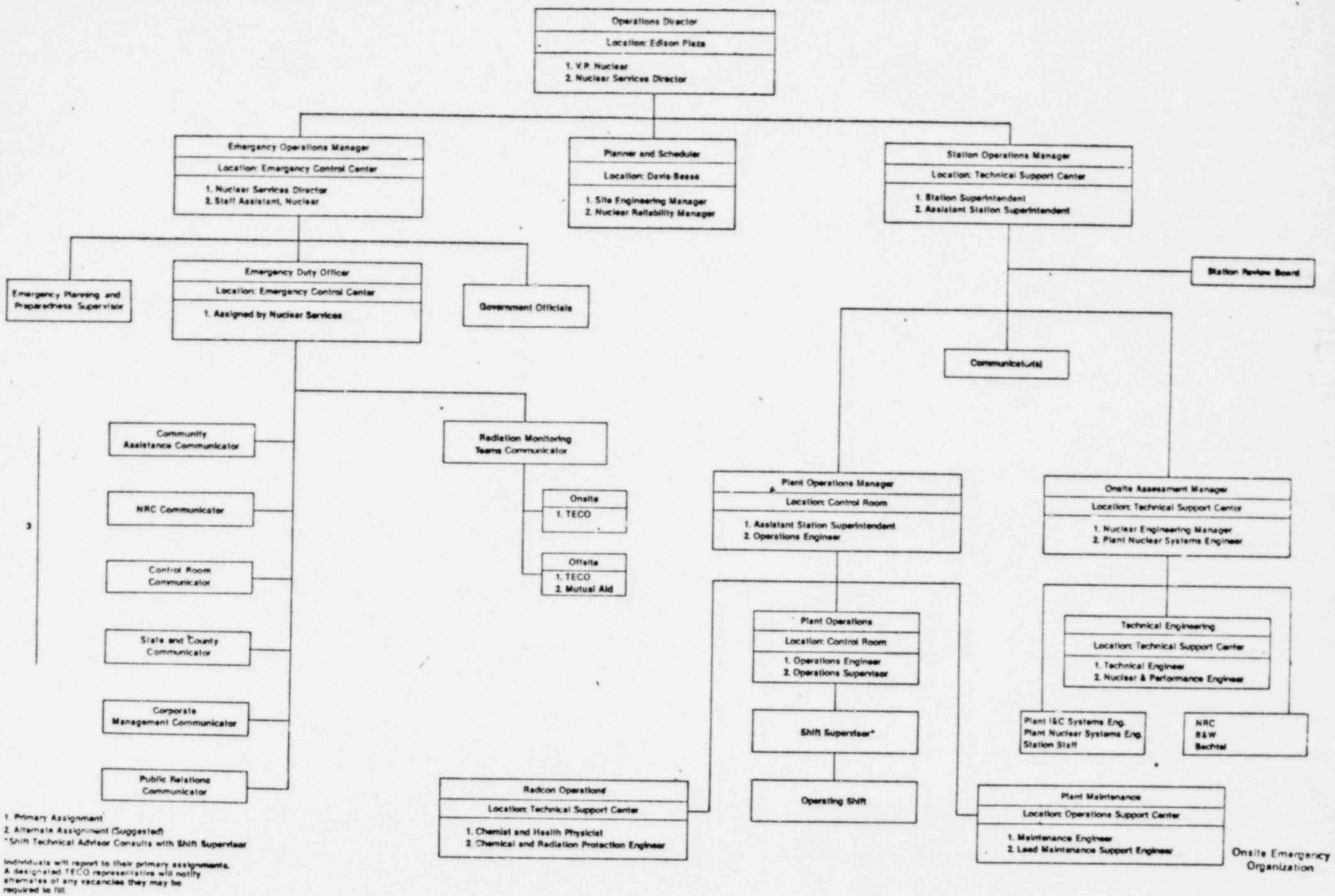
The shift mobilization procedure was tested by the licensee on January 20, 1982. The licensee estimates that complete mobilization would have been accomplished within 60 to 90 minutes. The licensee did not specifically determine the amount of time required for specific individuals to reach the site, therefore, no determination could be made whether the individuals capable of filling each position specified in Table B-1 of NUREG-0654 responded within 30-60 minutes.

Based on the above findings, the licensee's program is acceptable; however, the following matters should be considered for improvement:

- Prioritize the personnel call out list to assure that the expertise required in Table B-1 of NUREG-0654 can be identified.

- Conduct off hours shift augmentation drills to evaluate whether the call out system can meet the goals of Table B-1 of NUREG-0654, Revision 1. These drills should be conducted quarterly, documented, and used to identify and correct deficiencies in the call out procedure.

FIGURE 2.1



Onsite Emergency Organization

FIGURE 2.2

Offsite Corporate Emergency Response Organization Notification Levels

Emergency Title	Corporate Title	Alternate
Level I Directors		
1. Chairman	Chairman & CEO	V.P. Finance
2. Emergency Director	President & COO	V.P. Corporate Development
3. Operations Director	V.P. Nuclear	V.P. Energy Supply
4. Public Information Director	V.P. Public Relations	Retired V.P. Public Relations
Level II Directors		
1. Engineering Support Director	Nuclear Eng. & Const. Director	Fossil Facilities Eng. & Const. Director
2. Financial Director	V.P. Finance	Treasurer
3 Administrative & Logistics Director	V.P. Administrative Services	V.P. Corporate Development
4. Assistant to Chairman	Assistant to Chairman	Community Relations Director
5. Legal Director	Legal Services Director	Attorney
6. Engineering Support Manager	Facility Engineering Manager	Mechanical Eng. Supv.
7. Licensing Manager	Nuclear Licensing Mgr.	Nuclear Licensing Supv.
8. Security Manager	Industrial Security Director	Nuclear Security Manager
Level III Heads		
1. Community Relations Director	Community Relations Director	Eastern District Manager
2. Quality Assurance Director	Quality Assurance Director	Operations QA Supervisor
3. Company Nuclear Review Board	Fossil Facilities Engineering & Construction Director	As designated by CNRB Chairman
4. Advisory Group Coordinator	Asst. to V.P. Nuclear	Operations Analysis Director
5. Personnel Manager	Personnel Director	Management Compensation & Devel. Administrator
6. Procurement Manager	Procurement Director	Procurement Services Manager
7. Provisions Manager	Building & Office Services Director	Facility Service Manager
8. Transportation Manager	Transportation Superintendent	Fleet Standards Manager
9. Construction Manager	Nuclear Construction Manager	Nuclear Projects Staff Engineer
10. Personnel Processing Center Manager	Nuclear Eng. & Const. Office Supervisor	Communications Equip. Analyst
11. Technical Advisor	Nuclear Safety Director	----------
12. Recovery Manager	Asst. Supt. - Outage Mgmt.	Project Engineering Supv.

3.0 Training and Retraining

3.1 Program Establishment

The Davis-Besse Nuclear Power Station emergency preparedness training program is detailed in Section 8.1.1 and Table 8-1 of the Emergency Plan. All personnel at the station are required to take the General Orientation Training (GOT) program once a year. This program includes a module on the Emergency Plan with information on the purpose of the plan, emergency classifications, emergency alarms and appropriate response actions. Personnel selected for specified emergency duties receive periodic specialized training. These personnel include; Shift Supervisors, Assistant Shift Supervisors, Emergency Duty Officers, Technical Engineer, Chemist and Health Physicist, Senior Assistant C&HP Engineer, Nuclear Training Manager, Lead I&C Engineer, Nuclear Performance Engineer, Maintenance Engineer, Nuclear Reliability Manager, Operations Engineer, C&HP personnel and other station personnel designated as members of the onsite and offsite Radiation Monitoring Teams, all station personnel designated to be members of the First Aid Teams, members of the Guard Force, Fire Protection Coordinator, Fire Captains, members of the Fire Brigade, and corporate emergency response personnel.

The emergency response personnel who require specialized training are identified in Table 8-1 of the Emergency Plan. This table also indicates the type of training that is required and the frequency of that training. Offsite emergency support agencies such as state and local governmental agencies are identified for training in the Emergency Plan and procedures on an annual basis.

The emergency training program has been divided into nine modules. These modules are being developed for a "canned" audio-visual presentation under contract with Ohio State University. At the present time, only two of the modules have been completed. The modules are not designed to test the students on the material presented other than through the use of assessment criteria, which only serves to outline and highlight the major components of the module.

Formal lesson plans have been developed which state the objectives of the courses. Technical training courses were found to include hands on use of equipment and walk-throughs. In addition, specific training was provided on unusual conditions such as components and areas with high radiation levels, magnitude of radiation increases, and specific plume monitoring techniques.

A corporate emergency response training program is presently under development. Some one-on-one training with corporate emergency response personnel has occurred within the past year. Specific job descriptions were developed, distributed, and discussed with these personnel. Some training with offsite agencies has occurred, such as with the ambulance/emergency medical personnel and local police

agencies. However, no formalized generic program has been established to present the Davis-Besse Nuclear Power Station emergency planning and preparedness program to offsite agencies.

Generally, emergency planning and preparedness training is scheduled on an annual basis. No formal means exist for training emergency response personnel in significant changes in the plan or procedures, if these changes occur between training sessions.

Within the past year, the station has converted to a computer system for data control and record-keeping. This system needs improvement, since no records could be provided to verify that emergency plan training had been given to the onsite emergency organization directors and managers in 1981. The record-keeping system should be improved so that complete, accurate, and timely information can be obtained on all training records. Training records were obtained and reviewed for the Fire Brigade, First Aid Team, Radiation Monitoring Teams, EDO's, Guard Force, and Shift Supervisors and Assistants.

3.2 Programs Implementation

Although the site training records were incomplete as indicated above, the walk-throughs with licensee personnel demonstrated that training on the emergency plan and procedures had been given. Although a formal corporate emergency training function has not been established, interviews with corporate emergency response personnel indicated a good understanding of emergency operations concepts.

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

- A formal training program for the corporate emergency response organization should be established.

- Formal generic, as well as, specific training for offsite agencies in the Emergency Plan and Procedures should be conducted.

- The training record-keeping function should be improved to assure that complete, up-to-date, and timely information is available on the emergency preparedness training program.

- The use of the classroom style training session in addition to any "canned" audio-visual program that is established should be continued to ensure program accuracy, allow for a more in-depth, and specialized curriculum, and encourage student/instructor interaction.

- A method should be provided to test the students understanding of the course material.

- A system should be provided to promptly train emergency personnel when significant changes occur in policy, plans, or procedures rather than waiting for the next annual session.

4.0 Emergency Facilities and Equipment

4.1 Emergencies Facilities

4.1.1 Assessment Facilities

4.1.1.1 Control Room

The inspectors reviewed the control room emergency preparedness. The control room had updated copies of the Emergency Plan and Implementing Procedures. Emergency Communication equipment consisted of a Gaitronics intercom system, portable radios, plant telephones, and the four loop communication system described in Section 4.2.3 of this report. The Control Room meets the habitability requirement of NUREG-0696 and contained sufficient instrumentation and equipment to permit evaluation of magnitude and potential consequences of emergency situation.

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

4.1.1.2 Technical Support Center (TSC)

The licensee's TSC is located within the restricted area of the first floor of the Administration Building. It is situated in the immediate proximity of the Emergency Control Center (ECC). Movement of personnel between the TSC and the Control Room will be facilitated by placement of a dedicated vehicle at the north entrance to the restricted side of the Administration Building. Transit time from the TSC to the Control Room is less than four minutes.

The TSC contains all the communication systems described in the Davis-Besse Nuclear Power Station Emergency Plan, and meets the regulatory positions of NUREG-0654, Revision 1. The area designated for NRC use has two commercial telephones and an ENS extension. The TSC does not have an Health Physics Network (HPN) extension.

The TSC has radiological shielding, air conditioners and accoustical attenuation. The habitability requirements are designed to be the same as the Control Room. The Data Acquisition and Display System (DADS) within the TSC consists of colorgraphic displays with overhead monitors, a hard copy device capable of reproducing the image from any of the colorgraphic monitors, a line printer/plotter and trend recorder.

The TSC is sized to provide adequate working space for 25 personnel, including working space for five NRC personnel. Copies of the Davis-Besse Nuclear Power Station Emergency Plan and Implementing Procedures, current records, plant procedures, Technical Specification, and various schematic and drawings are readily available in the TSC.

Based on the above finding, the TSC is acceptable on an interim basis. However, this is an open item pending approval by NRC Division of Emergency Preparedness.

4.1.1.3 Operations Support Center (OSC)

The Operational Support Center (OSC) is as described in the Davis-Besse Nuclear Power Station Emergency Plan and EI 1300.06 (Operations Support Center Activation). The OSC is located on the turbine deck. The OSC appears large enough to accommodate all assigned personnel and is operated under the direction of the Maintenance Engineer. All emergency equipment and supplies specified in the plan and procedures were found operable and calibrated. In addition to the plant paging system, one outside commercial telephone, and the licensee's four loop telephone system were installed in the OSC. The OSC does not have fixed emergency lighting.

Based on the above findings, this portion of the licensee's program is acceptable. However, the following item should be considered for improvement:

- The OSC should be equipped with fixed emergency lighting.

4.1.1.4 Emergency Control Center (ECC)

The licensee's ECC is the designated Emergency Operation Facility as per NUREG-0696. The permanent ECC is located within the restricted area of the first floor of the Administration Building in the immediate proximity of the TSC. This ECC is as specified in the licensee's submittal dated June 1, 1981, and letter, Crouse to Denton, dated May 27, 1981.

The facility contains enough space for all personnel assigned to the ECC and working space for federal, state, and local officials. Communication and assessment equipment has been installed.

Complete sets of plant records, and plant procedures, copies of Davis-Besse Nuclear Power Station Emergency Plan and Implementing procedures and copies of the States of Ohio and Michigan and Ottawa County Emergency Plans are available in the ECC and in the TSC across the hall. The ECC contains adequate primary and backup communication equipment as per NUREG-0654, Revision 1.

The ECC is an open item pending approval by NRC Division of Emergency Preparedness. As an interim ECC it is acceptable.

4.1.1.5 Post-accident Coolant Sampling and Analysis

A review was made of the post-accident coolant sampling and analysis facilities and equipment based on the guidance of NUREG-0737. The review included discussions with the Chemistry and Health Physics

Supervisor, Radiochemistry Supervisor, Plant I&C Systems Engineer, Health Physics Shift Supervisors, and Chemistry and Health Physics Technicians. Walk-throughs of the sampling facility were conducted by the Chemistry and Health Physics Technicians and observed by the inspectors.

The interim reactor coolant sampling system was designed to obtain a pressurized coolant sample from the pressurizer vapor or water space. Following an accident the normal sample room would be inaccessible due to high radiation levels which would be indicated by the area radiation monitors. The emergency sample system was shielded and allowed taking of the sample in a low dose rate area. Provisions to recirculate the primary coolant and obtain a representative sample were made, although under certain accident conditions (i.e., LOCA) it was questionable whether a representative sample could be obtained from the pressurizer.

Provisions to flush the system were made and a shielded sample container was provided for transport of the sample to the analysis facility. The analysis facility contained two multichannel analyzers, GeLi crystals, and provisions for pH, chloride and boron analysis. The sample equipment provided for collecting the sample within one hour and analysis of the sample onsite within two hours. Provisions to move the counting facility to the east lobby of the office building or the water plant laboratory were made in the event the radiation levels in the counting laboratory became excessive.

The inspector's observation of the walk-throughs conducted by the technicians indicated that an adequate level of training in the use of the emergency coolant sampling equipment had been implemented. The inspector noted during the walk-through that the sample lines at the rear of the emergency sample module were not shielded. These lines should be shielded in order to reduce the dose rate in the sample area.

Based on the above findings, this portion of the licensee program is acceptable. However, the following item should be considered for improvement:

- All primary coolant sample lines at the rear of the emergency sample module should be provided with shielding.

The permanent post-accident sampling system was in development at the time of this appraisal. This system will provide for sampling of the pressurizer vapor or water space, the coolant cold leg loop, decay heat loops, steam generator letdown, and containment sump. The system will allow for sampling the reactor total coolant gases and provide both diluted and undiluted samples of reactor coolant. A dedicated grab sampler cart will be provided for collecting the sample. All required piping and sampling equipment will be installed during the next outage. Complete installation and operation of the permanent system is projected for the fall of 1982. This is an open item.

4.1.1.6 Containment Air Sampling and Analysis

A review was made of the post-accident containment air sampling and analysis equipment based on the guidance of NUREG-0737. The review included discussions with the Chemistry and Health Physics Supervisor, Radiochemistry Supervisor, Plant I&C Systems Engineer, Health Physics Shift Supervisors, and Chemistry and Health Physics Technicians. Walk-throughs of the sampling facility were conducted by the Chemistry and Health Physics Technicians and observed by the inspectors.

The containment air sampling system consisted of a 75 cc unshielded gas sample bomb (high pressure sampler), which samples the recirculating loop of the hydrogen gas analyzer on the 585 foot elevation of the Auxiliary Building. The gas bomb was located on top of the gas analyzer cabinet and contained a guage which registered to 100 psig. The analyzer system contained pumps which could be used to purge the sample line back to containment. The system samples noble gases and iodines. A shielded sample container was not provided to transport the sample bomb to the analysis facility. Under accident conditions individuals collecting samples may have to traverse very high radiation levels to collect the sample due to the containment spray lines in mechanical penetration room No. 3.

Estimated dose rated in front of the hydrogen gas analyzer cabinet are 0.1-5 R/hr and 5-50 R/hr in the hallway adjacent to the sampling station. The scenario posed to chemistry and health physics technicians during the walk-throughs was airborne contamination existed in the area requiring SCBA equipment. Collection of the sample involved working one's way behind the analyzer cabinet between several structural I beams, climbing a ladder, and reaching through a railing to remove the gas bomb from the top of the analyzer cabinet. Under maximum dose rate conditions, in the hallway and wearing SCBA equipment, it would not be possible to collect the sample within one hour and remain below the three rem quarterly limit stated in Section 4.1 of Procedure AD 1850.04. Under normal conditions the sample can be collected within one hour.

This situation was corrected prior to the appraisal teams departure from the site by moving the gas bomb to the side of the cabinet near waist level.

Installation and operation of the permanent high range containment sampling system is an open item.

4.1.1.7 Post Accident Gas and Particulate Effluent Sampling and Analysis

A review was made of the post-accident gas and particulate effluent sampling and analysis program based on the guidance of NUREG-0737. The reviews included discussions with the Radiochemistry Supervisor and Chemistry and Health Physics Technicians. Walk-throughs of the sampling facility were conducted by the Chemistry and Health Physics Technicians and observed by the inspectors.

The sampling system consisted of fixed and portable monitors. Fixed monitors sampled the main station vent, containment atmosphere, and containment purge exhaust. Each fixed monitor measured particulates, gases, and iodine. Portable monitors on carts were used in the spent fuel handling area during refueling operations, and in the radiochemistry laboratory during sample preparation of other wet chemistry operations. Portable monitors (SAM-2's) measured particulates, gases, and iodine. Scintillation detectors monitored the vacuum system vent, waste gas system outlet, fuel handling area exhaust, and the radwaste area exhaust. Visual and audible alarms were provided for high and low level alert at the local monitor sampling stations.

The main station vent was the primary post-accident sampling station. The station vent is continuously monitored, however, if these monitors were off scale (high) the emergency station vent sampling area located in the non-radwaste ventilation room (elevation 623 feet) would be put into service. Noble gases were monitored by a HP-270 probe for Xe-133 between 0.054 to 540 µCi/cc and a RD-174 probe for Xe-133 concentrations between 520 to 5.2×10^6 µCi/cc. The system contained a grab sample filter assembly for sampling particulates. Iodine was sampled with a silver zeolite cartridge. Particulate, gas, and iodine analyses were analyzed as described in Section 5.4 of Procedure AD 1850.04, and AD 1850.05.

It was recognized by the licensee that dose rates in the sample area could range up to 5 R/hr during accident conditions. At the time of this appraisal a new emergency vent monitoring station (KAMEN) was being installed on the turbine deck. Completion of installation will be accomplished during the next outage; however, this may be delayed.

Based on the above findings, this portion of the licensee's program is acceptable. The permanent high range monitor is an open item pending installation, calibration, and training of personnel on the system.

4.1.1.8 Post Accident Liquid Effluent Sampling and Analysis

A review was made of the liquid effluent sampling and analysis program based on the guidance of NUREG-0737. The review included discussions with the Chemistry and Health Physics Supervisor and tours of sampling locations conducted by the Chemistry and Health Physics Technicians. The post-accident sampling program consisted of sampling the major potential pathways for liquid effluent release from the plant. Under accident conditions grab samples could be obtained from the steam generator let down lines, the miscellaneous radwaste storage tank room, concentrate storage tank, condensate collection tank, turbine sump, auxiliary building sump, component cooling system, and spent fuel pool.

High level liquid samples could be obtained using tongs and shielded containers. The steam generator letdown lines and radwaste systems were continuously monitored and would isolate under accident conditions. Samples of these systems could be collected within one hour. Analysis facilities described in Section 4.1.1.5 would be used to analyze the sample.

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

4.1.1.9 Offsite Laboratory Facilities

Currently, the licensee uses PRM-7, Micro R/hr meters for field measurement of dose rates from silver zeolite cartridges. Station Supporting Procedure AD 1850.05.4 describes the first level EAL for radioiodine that would trigger immediate contact between the technician and the control room; 20 μR/hr. This EAL is equivilent to 1.5 rems to a child's thyroid if exposed for ten hours. The Shift Supervisor could then relate station vent release rates of radioiodine to population exposure, and subsequent recommendations for protective actions if necessary.

Sodium iodide crystal SAM-2 counters are available for sample counting in the ECC. The SAM-2, mounted on wheels, could be moved to the ECC for additional counting capability, should it be needed. The ten mile radius has only one-half of its circumference on land and Lake Erie has no occupied islands within the ten mile radius. The land surface around the site is flat and is transversed by many roads. Consequently, ten to twenty minutes is all that would be required to bring the field samples into the ECC laboratory for counting.

Based upon the above findings, this portion of the licensee's program is acceptable.

4.1.2 Protective Facilities

4.1.2.1 Assembly Areas

The 623 foot elevation in the turbine building is the Operational Support Center and is the assembly point for personnel inside the protected area of Davis-Besse Nuclear Power Station. The facility will accommodate several hundred personnel. Communication equipment consists of a commercial telephone line and the Toledo Edison Emergency Communication four loop telephone system.

The Construction Office Building is the assembly point for all personnel outside the protected area. The normal telephone system and first aid equipment were available at this assembly point.

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

4.1.2.2 Medical Treatment

A review was made of the licensee's first aid and medical treatment facilities to determine if they meet the planning standards of 10 CFR 50.47(b) and NUREG-0654, Revision 1. The inspector also reviewed the licensee's procedures for dealing with injured and/or contaminated persons.

All shift personnel, chemistry and radiation technicians, and other station personnel as designated, are trained in Red Cross Multi-Media equivalent first aid. The emergency plan requires that injured persons needing care beyond first aid be transferred to Magruder Hospital in Port Clinton, Ohio.

The licensee maintains a medical treatment room on the 603 ft. level of the Turbine Building adjacent to the Radiation Access Control Area (RACA). This room is outfitted to support the aid that can be administered by personnel qualified in Multi-Media level of Red Cross training.

There are also small first aid kits placed throughout the plant which contain items typically needed to care for minor injuries. The next level of first aid consists of Medical Stations located adjacent to the control room, turbine building operating levels, and in the Water Treatment Building.

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

4.1.2.3 Decontamination Facilities

A review was made of the decontamination facilities based on the guidance of NUREG-0654. The review included discussions with the Chemistry and Health Physics Supervisor and tours of the decontamination facilities conducted by Chemistry and Health Physics Technicians. A tour was also conducted of the decontamination facilities and equipment at the Magruder Memorial Hospital in Port Clinton, Ohio. Provisions had been made for adequate health physics instrumentation at each decontamination station including the hospital.

Chemistry and Health Physics personnel, and hospital personnel were trained in personnel decontamination Procedure HP 1604.01. Adequate decontaminants were available both onsite and at the hospital. Provisions had been made for collection and disposal of solid and liquid waste, both on and offsite. Provisions had also been made for replacement clothing.

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

4.1.3 Expanded Support

The inspectors examined the licensee's provisions for expanded support. The second floor of the Administration Building is intended to be used for expanded support operations. The normal telephone system would be used for communication. Additional telephone service has been contracted for and could be installed on a 24 hour basis. The licensee's Lindsey, Ohio District Office could also be used for additional space. A "trailer city" could be set up onsite. There is a contract to provide trailers from Ace Trailer of Toledo, Ohio.

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

4.1.4 News Center

The licensee currently has Public Relation (PR) Offices and a media briefing area located on the nonrestricted side of the Administration Building. This area provides a radiologically and structurally protected location for contacts with individual media people, a work area for PR releases by Toledo Edison and a location for press gathering, briefings, and PR releases. A bank of telephones has been installed. The area is equipped with copying equipment, a public address system and audio visual equipment for making presentations. The facility can accommodate approximately 200 media representatives.

The licensee has a document titled, "Public Information Policy and Procedures," which describes the operation of the PR Section and news briefing area.

Based on the above findings, the licensee's program is acceptable.

4.2 Emergency Equipment

4.2.1 Assessment Equipment

4.2.1.1 Emergency Kits and Emergency Survey Instrumentation

A review was made of the emergency kits and emergency survey instrumentation based on the guidance of NUREG-0654. The review included discussions with the Chemistry and Health Physics Supervisor, and the Health Physics Shift Supervisor. Tours and inspections of emergency kits were conducted by Chemistry and Health Physics Technicians and observed by the inspectors. Dedicated emergency instrument cabinets located on the 623 foot elevation of the east side of the turbine deck and in the ECC laboratory were inspected and inventoried during the appraisal. Inventories were correct and all equipment was operable. The cabinets contained beta-gamma survey meters, high and low range ion chamber instruments, micro-R meters, high and low range personnel pocket dosimeters, personnel TLD's, finger rings, assorted protective clothing, warning signs, radiation rope, and plastic bags.

Included in the cabinets were stabilized assay meters (SAM) for iodine analysis and Reuter-Stokes environmental monitors. Low volume sample pumps (AC and DC), batteries, filter papers, and silver zeolite cartridges were also stocked. All emergency cabinets are inventoried monthly. Instruments are operability checked quarterly and calibrated semiannually. Calibrations are NBS traceable.

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

4.2.1.2 Area and Process Radiation Monitors

The inspectors examined several Area Radiation Monitors (ARMs) and Process Monitors (PMs). There are currently 38 ARMs and 45 PMs. These units read out in the control room. The ARMs have an operating range of 0.1 to 10^7 mR/hr. The PMs have a range of 10 to 10^6 cpm. Conversion curves have been developed and are used by reactor operations and health physics personnel for the PMs. These curves relate the cpm values to µCi/cc values.

Critical PMs have backup instruments/readouts such that should an instrument fail (e.g., Station Vent), a different PM could be substituted. All ARMs and PMs have routine calibrations related to the importance of their roles. The range of calibration schedules range from 3 to 18 months. Experience has shown that the calibration schedule is appropriate for the various "Classes" of instruments. Inoperable instruments are promptly repaired.

All critical ARMs and PMs, as identified in the Technical Specifications, are on vital power, split evenly between two vital power sources. The remaining ARMs and PMs are divided between non-vital power sources, such that if only one source of power was lost, half of the monitors would still operate adequately.

There are written procedures for calibration of all monitors. Calibration is conducted by the maintenance department personnel. Records of the calibrations are also maintained by the maintenance personnel.

The high range (10^8 R/hr) containment dome monitors and high range (10^5 µCi/cc) vent monitors are to be installed within the year. These are open items as previously discussed.

Based upon the above findings, this portion of the licensee's program is acceptable.

4.2.1.3 Non-Radiation Process Monitors

The Non-Radiation Process Monitors (N-P PMs) include containment pressure, primary system water, reactor core temperatures, chlorine gas, and seismic monitors. Emergency action levels exist for each of these monitors.

Chlorine gas is stored in a tank car onsite. The gas is monitored at the source as well as at the control room air intake. Should either or both of these monitors alarm, the read out is in the control room. Emergency procedures would be implemented immediately following an alarm and the control room ventilation system would automatically go on recirculation.

The chlorine monitors are checked and calibrated quarterly, and review of the experience with these monitors indicates that the calibration schedules for these monitors is adequate.

The reactor core temperature monitors are tested and calibrated in accord with Technical Specifications as are containment pressure and primary system water levels and pressures. However, the existing incore thermocouple temperature monitors can not directly measure the EAL of >2000°F. Consequently, it would be necessary for instrument and control personnel to use portable meters for thermocouple readouts above about 850°F. The licensee has procured new thermocouple equipment to allow readouts up to 2300°F. This equipment will be installed in an upcoming outage.

On December 21, 1979, the licensee submitted a special report on Technical Specification 6.9.2 to the Region III Regional Director concerning the inoperability of part of the seismic monitoring system. All efforts expended by the licensee to repair the seismic equipment have failed to return the equipment to a fully operable status. Consequently, the licensee is in the process of procuring a new seismic monitoring system.

The existing seismic monitor capability is limited to recording a seismic event. Interpretation of taped data is not possible in the control room. Walk-throughs (see Section 7.2), showed that due to the complexity of the system, the Instrument and Control personnel would have to be called in to operate the seismic monitoring system. One highly skilled reactor operator who had not been trained on the equipment, was able to follow the procedure, but did not know where the replacement tapes were kept. Replacement tapes are required for continued seismic monitoring while interpretation of the "recorded" tape takes place. Further discussion of the procedures is found in Section 5.2.

Based upon the above findings, this portion of the licensee's program is an open item pending installation of an upgraded seismic system.

4.2.1.4 Meteorological Instrumentation

The inspector reviewed the licensee's meteorological measurements program in accordance with Regulatory Guides 1.23 and 1.97 and the criteria set forth in NUREG-0654 and NUREG-0737.

The licensee outlined the characteristics of the meteorological measurements system in the Emergency Plan, Section 7.6.5. The integration of meteorological data into the licensee's dose projection scheme is summarized in the Emergency Plan and Administrative Procedures Section AD 1827.10. The inspector also reviewed the licensee's meteorological instrumentation and its associated preventive maintenance program.

The current meteorological instrumentation provides the basic parameters (i.e., wind direction and speed and an estimator of atmospheric stability) necessary to perform the dose assessment function. Data from the meteorological measurements system were available in the control room on display dials and via computer readout. If necessary, meteorological information could also be obtained from the Perry Nuclear Site or NWS stations in Toledo or Cleveland.

The licensee has maintained a program for inspection and preventive maintenance. The instrumentation in the meteorological shed is checked three times each week and the data is displayed via computer printout each weekday for a visual examination. All instrumentation is calibrated quarterly. The siting and exposure of the meteorological instrumentation on the towers at the time of the appraisal was acceptable.

The inspector concluded that the licensee had the capability to appropriately integrate meteorological data into the radiological measurement/projection procedures with the exception of the determination of a Xu/Q value for G stability. A table is provided (Table 2 of AD 1827.10) that gives Xu/Q values for stabilities through F only, even though a G stability could be determined. It was also noted that the procedures called for the use of sigma theta as the primary indicator of stability with ΔT as the backup. Discussions with the licensee and control room personnel showed that this was not correct and that ΔT is used as the primary indicator. The licensee was aware of this error in the procedures and was in the process of correcting it.

The shift operations personnel will obtain acceptable National Weather Service information on severe weather warnings and watches in the site vicinity from the load dispatcher.

Based on the above findings, this portion of the licensee's program is acceptable. However, the following item should be considered for improvement:

- Table 3 of the Emergency Plan Administrative Procedures Section AD 1827.10 should be revised to include Xu/Q values for the G stability class. This should be conducted in conjunction with the schedules for upgrading the Class A model.

4.2.2 Protective Equipment

4.2.2.1 Respiratory Protection

The licensee has placed Self-Contained Breathing Apparatus (SCBA) both at the point of need (e.g., control room and access control) and in controlled storage for emergency use. Adequate initial SCBA units would be available during an emergency event.

The capability exists for refilling SCBA devices. A single SCBA can be refilled in 0-3 minutes. The SCBA refilling system is used to refill any dedicated emergency tanks that have leaked off during tank pressure checks. The system has been located such that it would be accessible during emergency events involving high radiation dose rates.

Based upon the above findings, this portion of the licensee's program is acceptable.

4.2.2.2 Protective Clothing

Stores of protective clothing are maintained near the access control point, in emergency kits, in a warehouse and with the SCBA equipment dedicated for emergency purposes. The emergency stores of clothing would be accessible under emergency radiological conditions, and would be adequate for several days before replentishing from the site warehouse and/or other offsite locations.

Based upon the above findings, this portion of the licensee's program is acceptable.

4.2.3 Emergency Communications Equipment

Onsite and offsite communication equipment was examined by the inspectors at the following locations: Control Room (CR), OSC, TSC, Emergency Control Center (ECC), and the Corporate Emergency Support Center. The ECC and the TSC are areas of the licensee's EOF, the Davis-Besse Administration Building.

The ECC contains a remote radio console for offsite contacts, company security, county sheriff departments and load dispatcher. This radio system can transmit and receive in six modes. Four separate telephone loops have been established between emergency facilities: (1) Technical Data Loop; (2) Technical Management Loop; (3) Policy Management Loop, and (4) Public Relations Loop. These are shown in Figure 4.1. A continuous open telephone line has been established in the ECC with the county and state emergency organizations. A teleprinter is available for hard copy of data for offsite governmental agencies. Gai-tronics, a public address system, separate from the telephone system, is also available on five channels.

The TSC is located diagonally across the hall from the ECC and has similar equipment except no radio console. A teleprinter is available which makes a copy of technical data projected on a television screen from a CRT in the TSC room. No HPN phone line has been installed.

The OSC is located on the turbine deck and currently occupies part of a cafeteria's space. An emergency plan telephone with the four telephone loops, one outside telephone, Gai-tronics and portable radios make up the communications equipment.

Control room equipment includes a radio console and beeper notification, pager controller, NRC hot line phone, emergency phone with two loops, two television screen monitors which can project information from the Quadrex computer terminal in the ECC, a Babcock & Wilcox dedicated telephone and dictaphone which ties into a Toledo Edison phone line. The dictaphone is utilized to have a voice record of emergency conditions to give to outside agencies.

The Emergency Support Center (ESC) at the corporate office, has equipment which includes an emergency four loop phone setup, a tone alert radio and a teleprinter machine. All emergency facilities, except the ESC, have an NRC hot line, and each can communicate with the other. A mobile radio has been installed in a dedicated vehicle to be used by the licensee's President, Station Superintendent and the EDO for response to an emergency. Communication equipment tests are made monthly on radios, telephones, the Gai-tronics system, and the NRC emergency phones. Primary and backup communication systems are available onsite.

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

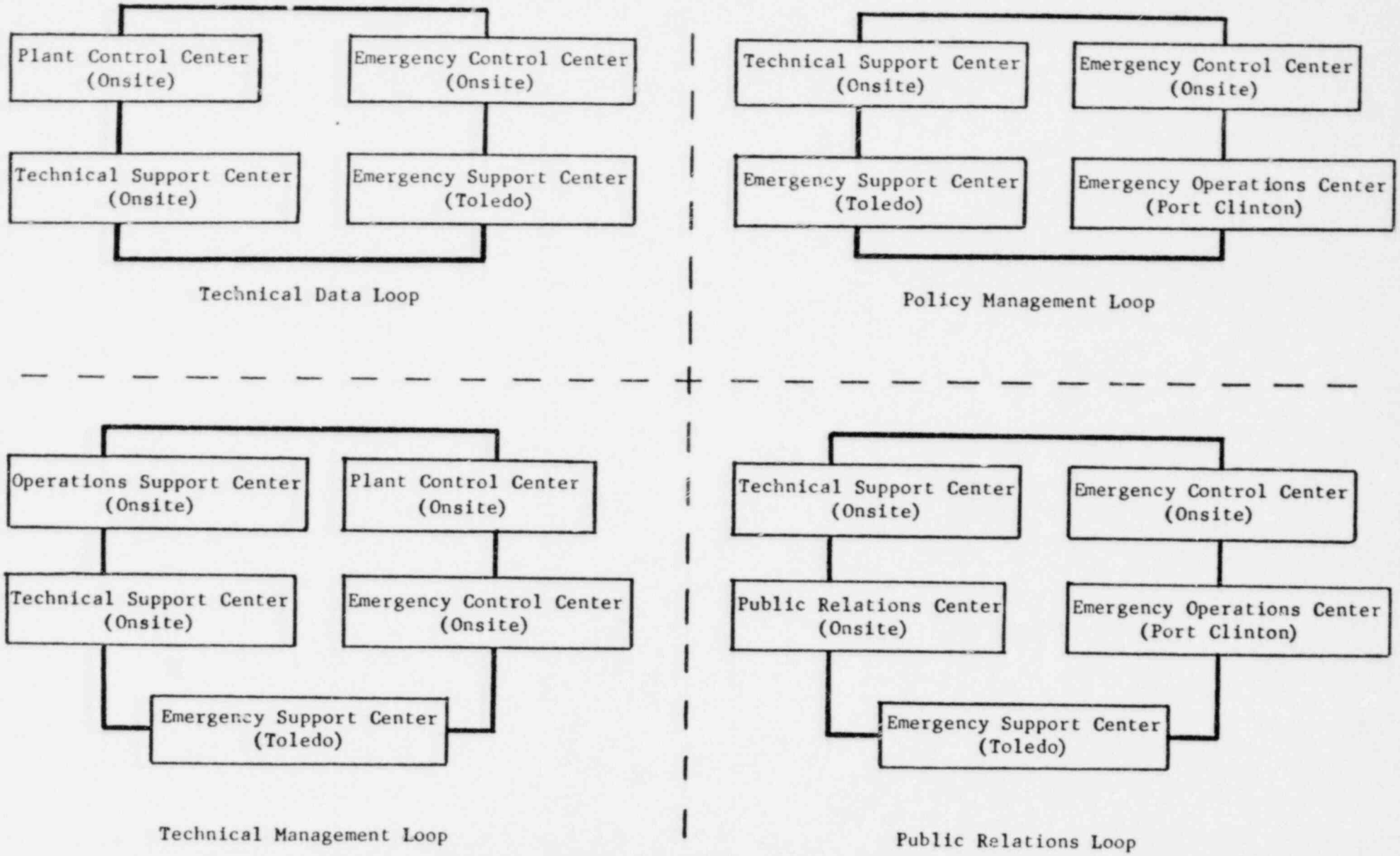
- Arrangements should be made to install an HPN telephone in the TSC.

4.2.4 Damage Control/Corrective Action and Maintenance Equipment and Supplies

The inspector determined through interviews and procedures review, that the licensee's needs for lifting equipment, welding equipment, movable shielding, replaceable piping, valves, and decontamination supplies can be met if an emergency required them. Large equipment is kept in the warehouse. The Lead Instrument Control Engineer, an alternate OSC Manager, described the type of equipment available. Conventional, non-nuclear equipment can be obtained from the licensee's Bayshore Plant and the Acme Plant which are the closest ones to this plant. Nuclear equipment, if needed, can be supplied by the Enrico Fermi Nuclear Plant, which has an agreement with the licensee to provide these needs.

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

FIGURE 4.1



- EMERGENCY COMMUNICATIONS LOOPS

4.2.5 Reserve Emergency Supplies and Equipment

Emergency radiation monitoring equipment, including dosimeters, is available in a locked cabinet at the 623 foot level on the Turbine Deck for use by the OSC or control room. Additional equipment is available in RACA in a separate locked storage room. Other reserve supplies kept in stock include protective clothing, respiratory equipment, and decontamination supplies.

The ECC and TSC have emergency supplies and equipment kept in locked cabinets on the same level as these emergency facilities. A list of this equipment is part of the Emergency Plan Implementing Procedure No. EI 1300.08.1. This equipment includes radiation detectors, air samplers, dosimeters, SAM-2's, protective clothing, and other supplies needed for offsite monitor teams.

First aid equipment is kept in a locked cabinet outside the Shift Foreman's office and also near the control room entrance.

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

4.2.6 Transportation

The licensee's Security Department has three dedicated vehicles, each with a four wheel drive, that can be used for emergencies. Keys for these vehicles are administratively controlled and are readily accessible. Also an all terrain tracked vehicle called a Snow-Dozer is available for transportation in heavy snow storms.

The C&HP Department has its own dedicated four wheel truck to use for offsite radiation monitoring and environmental monitoring. Other departments as Operations and Maintenance also have vehicles that may be used in emergencies.

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

5.0 Emergency Implementing Procedures

5.1 General Content and Format

During routine reactor operations the licensee uses "operating" procedures. Offnormal conditions in the reactor plant may be brought to the attention of the operator by either visual observations outside of the control room by others or observations by the operators in the control room. Most of the offnormal conditions, that could have a significant impact on nuclear safety, would, in the incipient stages of such a condition, result in activation of an annunciator.

Upon annunciator activation, the nuclear reactor operator gains access to an Annunciator Procedure (AP) by either the direct knowledge of the total number of annunciators, annunciator panel number and row numbers, or use of a keyed-card Rolodex on the counter immediately behind him.

The format of the APs is uniform: Symptoms, Immediate Operator Action(s), and Supplementary Action(s). If warranted, the AP refers the operator to a specific Emergency Procedure. The Emergency Procedure (EPs) in turn, where warranted, refer the Shift Supervisor to the Emergency Plan Implementing Procedure (EIs). The EPs have the same format as the APs. The EIs format is uniform, but differs from the APs and EPs: Purpose, Scope, References, Definitions and Emergency Measures.

The EIs, in the reference section, specify applicable Emergency Plan Supporting Procedures (ADs). The ADs format, while not uniform, appropriately cover the purpose, references where needed, precautions and limitations where needed, procedures and/or actions where needed, and responsibilities where needed. The ADs are further supplemented by Administrative Memoranda as necessary.

The Emergency Action Levels (EALs) and Protective Action Guides (PAGs) are specified in the emergency procedures as necessary. The emergency actions are also specified, in a step-by-step fashion. Precautions and/or a special designation "NOTE" are used to call attention to special instructions.

Although the responsibilities are generally clear in the emergency procedures, the responsibility of the Shift Supervisor, should he fail to contact the Station Superintendent, is not clear. Walk-throughs of all shifts, however, clearly showed that if the two proceduralized steps to contact the Station Superintendent failed, the proper actions would be taken immediately by the Shift Supervisors. Thus, although the procedures, in this case, appears not to allow the Shift Supervisors to exercise, they had no hesitation in making appropriate decisions.

The emergency procedures, where appropriate, have step-by-step check lists. The check lists are designed for the persons who would use them. The check list form is described in Section 5.3.

Based upon the above findings, this portion of the licensee's program is acceptable. However, the following item should be considered for improvement:

- Those EIs containing directions to contact the Station Superintendent should specifically allow the Shift Supervisor to exercise judgment.

5.2 Emergency Alarm and Abnormal Occurrence Procedures

As indicated in 5.1, all emergency procedures, including the APs have a uniform format. The Abnormal Procedures (ABs) are written for:

- Loss of all AC Power
- Cooldown without BWST and No Offsite Power
- Depressurization of the RCS With Only Safety Grade Equipment
- Complete Loss of Main and Auxiliary Feedwater
- Inadequate Core Cooling Guidelines

All of the procedures relate to maintaining water on the fuel. They are written strictly as a guide for the operator and are in no way intended to be detailed in actions to be taken. The objective is to provide the operators with necessary general actions, problems that may be anticipated and what detailed emergency and operating procedures may be needed.

AB 1203.06.0, Inadequate Core Cooling Guidelines, has one Caution Note: "Some Directions Given In These Guidelines Are Not In Agreement With Directions In Other Procedures. If An Inadequate Core Cooling Situation Exists, The Directions Of This Procedure Supercedes All Others." Except for one item of interpretation, the inspector agreed with this note. AB 1203.06.0 is referenced by EP 1202.06. EP 1202.06 references the EI procedures, and AB 1203.06.0 does not. Under the press of an emergency, it is, therefore, possible (although not likely) that communications with the Shift Supervisor might overlook key EALs for emergency escalation or de-escalation notifications when using AB 1203.06.0.

Walk-through with each shift demonstrated that the combined use of APs, ABs, EPs, EIs and ADs were generally adequate. However, when the simulated scenerio of "complete loss of DC power" was presented, the shift supervisors were unable to find any APs, ABs, or EPs that covered the situation. As a result, they were unable to immediately classify the emergency. None-the-less, each supervisor presented with the scenario was able to initiate some corrective actions.

Table 1, Page 24, of EI 1300.01.0 provides Alert and Site Emergency classifications for loss and sustained loss of all onsite DC power, respectively. As a result of walk-throughs, the inspectors deemed it possible that offsite notifications might not be made within 15 minutes following verification of the loss of DC power.

Annunciator Procedure (AP) 3009.31.0 provides guidance for the reactor operators on the station seismic instrument. EI 1300.01.1 provides guidance for the Shift Supervisor on classifying the seismic event. The Emergency Plan also contains EALs for seismic events. The EALs in each of these three documents are:

	EVENT EALs		
DOCUMENT	UNUSUAL EVENT	ALERT	SITE EMERGENCY
Emergency Plan	Any Earthquake	>0.08g*	>0.15g**
Emergency Plan Implementing Procedure	Any Earthquake	Not Covered	>0.15g
Annunciator Procedure	0.1g***		

*OBE
**SSE
***Level at which seismic instrument "turns" on.

To classify a seismic event, AP 3009.31.0 refers the reactor operator to SP 1105.17 (Seismic Monitoring System). However, the reactor operators have not been trained on this procedure (See also Section 4.2.1.3). Further, the existing seismic equipment is, while apparently satisfactory for annunciation at 0.1g, incapable of providing data for interpretation of the level of the earthquake, except at the level set for annunciation. As a direct result, it is possible that an earthquake which exceeds safe shutdown levels could occur and shutdown would not have been determined.

Based upon the above findings, the following actions must be taken to achieve an acceptable program:

- Documented guidance and training shall be provided for reactor operators and/or Shift Supervisors for coping with a loss of vital DC power. This shall include provisions to ensure that the Shift Supervisor will classify the event in accordance with the EP.

- All operations crew personnel (licensed operators) shall be retrained in the implementation of Special Procedure 1105.17, Seismic Monitoring System.

- A schedule for installation and calibration of an upgraded seismic monitoring system shall be provided. The seismic EALs in all emergency plans and procedures shall conform to NUREG-0654 guidance.

The following item should be considered for improvement:

- Procedure AB 1203.06.0 (Inadequate Core Cooling Guidelines) should be revised to ensure that the Shift Supervisors and operators do not omit the need for implementing EIs in accord with the reference provided in EP 1202.06.

5.3 Implementing Instructions

Emergency Plan Implementing Procedure (EPIPs) are designed for each class of emergency:

1. Unusual Event: EI 1300.02
2. Alert: EI 1300.03
3. Site Emergency: EI 1300.04
4. General Emergency: EI 1300.05

EPIP EI 1300.00 defines the emergency classes and EPIP EI 1300.01 covers the activation of the Emergency Plan. EI 1300.1 has both an index for the 22 Emergency Action Level (EAL) conditions and a detailed list of the safety condition, symptoms and the emergency classification. The conditions (e.g., core fuel damage, loss of fission product barriers and fire) explain what the offnormal situation is, how one can tell (EAL), what the emergency class is for the EAL, and the number of the EPIP for the condition found.

The emergency measures taken by the emergency staff is specified in EPIPs. These measures are displayed in a step-by-step sequential fashion. Limitations and/or precautions are specified in EPIPs and supporting procedures where needed. References to other related procedures are found in each EPIP both on the first page of the instruction and within the appropriate emergency measures section.

Functional responsibilities covering initial and continuing notifications and actions are specified in the procedures. EPIPs 1300.02, 1300.03, 1300.04, and 1300.05 have check lists that employ an "Action Completed Section." As each section is completed, the shift supervisor/EDO fills in the date, time and initials blanks.

Based upon the above findings, this portion of the licensee's program is acceptable.

5.4 Implementing Procedures

5.4.1 Notification

The licensee employs Emergency Plan Implementing Procedure (EPIPs), EIs 1300.02, 1300.03, 1300.04, and 1300.05 to assure proper sequence for notification, mobilization and/or augmentation of the onsite emergency organization and supporting agencies. These four EPIPs are individually designated for each specific emergency class. To make these notifications an Emergency Call System Administrative Procedure (AD 1827.17) is used and the ECS Pager and Telephone Numbers for all calls are maintained in Administrative Memorandum 37-22.

The EPIPs contain check lists for each emergency classification for use by the Emergency Duty Officer (EDO/Shift Supervisor). The EDO is, initially, the Shift Supervisor who then is relieved of this responsibility when the EDO arrives (within a few minutes) at the ECC. The

list of qualified EDOs are specified in Attachment 2 of Administrative Memorandum No. 37-22. There are sufficient numbers of specified EDOs so that around-the-clock coverage can be maintained for an indefinite period of time.

Periodic updates of information concerning the status of the emergency, along with emergency termination notification, are specified in the appropriate EPIPs. Reclassification of an event is considered as conditions change, and return telephone calls are requested from each person in an outside agency, that has been contacted, to provide authentication of the message. A pre-established essential information message is provided in EI 1300.08.

Based upon the above findings, this portion of the licensee's program is acceptable.

5.4.2 Assessment Actions

The licensee uses Emergency Plan Implementing Procedure EI 1300.01, Emergency Plan Activiation, as the overall procedure that would be used to initiate the accident assessment scheme. This procedure provides the condition, indications (EALs), and the emergency classification along with the reference to the applicable EI for each emergency class.

The appropriate EIs reference the Station Supporting procedures required to make dose assessment and protective action recommendations. During walk-throughs, each shift demonstrated the capability to make offsite dose calculations, and to make appropriate protective action recommendations.

Provisions for offscale control room instrument readings were provided by backup instruments and/or sample collection. Following installation of the high range noble gas monitor (see Section 4.1.2.2) EALs will be developed for inclusion of this equipment into the dose assessment scheme.

AD 1827.12, Protective Action Guidelines, provides guidance to the EDO on prompt offsite notification for protective action recommendations. A check list is developed to assist the EDO in rapid "Evacuation vs. Shelter Decision Algorithm for Whole Body Exposure" and "For Thyroid Dose." Each class of emergency has on and offsite notification requirements (see Section 5.4.1).

The procedural requirements (e.g., ten minute update on Xenon and Iodine readings for calculations and periodic dose assessment recalculations over the course of the event) provide assurance that trends will be evaluated by the emergency organization. Similarly, update provisions for the Ottawa County Sheriff's Department are in place to insure proper assessment and protective actions for the general public.

The licensee's complete environmental program is fully defined in Section 7 of the Emergency Plan (see also Section 5.4.2.12 of this report).

Should all of the reactor's normal release pathway monitors fail, the backup monitors fail, and the sampling system fail, or should a high level release occur in a non-monitored location (e.g., containment failure), then the licensee's offsite radiological surveillance program would be used to provide high level release estimates.

The inspectors conducted walk-throughs during each operating shift (see Section 7.2). Each shift's assessment actions, both radiological and non-radiological, were observed. Dose calculations, based upon EALs and other conditions provided by the inspectors, were conducted by Shift Supervisors or their Assistant Shift Supervisors, depending upon the work activity level in the control room at the time. The calculator system and the hand calculation system were, at different times, used. The results were compared to the inspector's computer analysis that were developed specifically for the walk-throughs prior to walk-through initiation. The calculator method and the hand calculational method were both comparable with the computer results.

The licensee is currently setting up a complete computer program for offsite dose calculations. The varying parameters used for computer inputs will be displayed in the Control Room, the TSC, and the ECC. The inspectors used the procedures to operate the portion of the computer program that is currently in place. All of the necessary non-radiological inputs, a map of the region with sector divisions, and a display of program components that will become available in the future were reviewed. The computer program will be added to the existing calculator and hand calculation methods for dose assessment.

The meteorological portion of the programs was evaluated by an inspector. The suggestions recommended by the inspector (see Section 4.2.1.4) were completed prior to the closeout meeting.

Based upon the above findings, this portion of the licensee's program is acceptable.

5.4.2.1 Offsite Radiological Surveys

A review was made of the offsite radiological survey procedures based on the guidance of NUREG-0654. Procedure AD 1850.05, Radiation Monitoring Team Surveys, Section 3.2.2 contained the instructions for collecting offsite gas and particulate samples. Section 3.0 of the procedure contained the instructions for obtaining the offsite sampling kits from the emergency cabinets, inventory of kit contents, and inventory of special equipment required for the sampling activity. Company four wheel drive vehicles were available for transportation to the sample site. Radios were available in the emergency cabinets for communication to the Emergency Duty Officer (EDO), located in the Emergency Control Center (ECC) lab.

Survey points or sample locations within the plume EPZ were chosen based on a plume dispersion computer calculation made in the Technical Support Center (TSC). The team was dispatched by the EDO. All results of surveys or sample analysis were relayed to the EDO by radio or telephone as a backup. Analysis data worksheets and sample logs were contained in the offsite kits. Sample location maps were contained in the kits. Protective equipment such as clothing, respirators, and SCBA's were available in the ECC lab. Analysis of the silver zeolite cartridges was performed in the ECC lab.

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

5.4.2.2 &
5.4.2.3 Onsite, Out of Plant, and In Plant Radiological Surveys

A review was made of the onsite, out of plant, and in-plant radiological survey procedures based on the guidance of NUREG-0654. Procedure AD 1850.05, Radiation Monitoring Team Surveys, Section 3.2.3 contained the instructions for obtaining onsite gas and particulate samples. Identical instrumentation and equipment as used for offsite surveys in Section 5.4.2.1 of this report, were available from the emergency cabinets for onsite surveys either within, or outside of the plant. Sample locations were specified by the EDO. Survey and analysis data were relayed to the EDO in the ECC. Analysis of the silver zeolite cartridge was performed in the ECC lab.

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

5.4.2.4 &
5.4.2.5 Primary Coolant Sampling and Analysis

A review was made of the primary coolant sampling and analysis procedures based on the guidance of NUREG-0737. Procedure AD 1850.04, Post-accident Radiological Sampling and Counting Section 4.5.3 contained precautions and estimated dose rates in the area of the coolant sampling system. The area also contained an area monitor which could be used to estimate dose rates from the coolant sample. Section 5.3 of the procedure indicates the actions to be taken to obtain the sample and Section 5.4 contained the procedure to count and analyze the sample. Efficiency charts for counting geometries and data tables for analysis of the sample were contained in the counting room manual. Provisions were made in the procedure to assure that high range portable survey instruments were used by the sample team prior to entry into the sample area. Provisions for labeling the sample and analysis work sheets were contained in the counting room manual. The sample could be analyzed onsite within two hours.

Procedure AD 1850.04 did not contain provisions for disposal or storage of samples after analysis, and did not contain access and egress routes based on area monitoring information for obtaining the sample, or

transportation methods for relocating the multichannel analyzer as discussed in 4.1.1.5.

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

- Procedure AD 1820.04 should provide for disposal or storage of coolant samples after analysis.

- Access and egress routes should be provided based on projected radiation levels in corridors and hallways for the sample team obtaining the coolant sample to ensure ALARA is adhered to.

- Procedure AD 1850.04 for the transportation and relocation of the multichannel analyzer and GeLi crystal should be upgraded.

5.4.2.6 &
5.4.2.7 Containment Air Sampling and Analysis

A review was made of the containment air sampling and analysis procedures based on the guidance of NUREG-0737. Procedure AD 1850.04, Post-accident Radiological Sampling and Counting, Section 5.1 contained the procedures for obtaining the sample and Section 5.4 contained the procedure to count and analyze the sample. Efficiency charts for different counting geometries and data tables for analysis of the sample were contained in the counting room manual. Provisions were made in the procedure to assure that high range portable instruments were used by the sample team prior to entry into the sample area. Provisions for labeling the sample and analysis work sheets were contained in the counting room manual. The sample could be analyzed onsite within two hours.

Procedure AD 1850.04 did not contain provisions for disposal or storage of the sample after analysis, and did not contain access and egress routes based on area monitoring information for obtaining the sample. The same counting facilities described in Section 5.4.2.4 and 5.4.2.5 would be used for analysis of the sample.

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

- Procedure AD 1850.04 should include provisions for disposal or storage of the gas sample bomb after analysis.

- Access and egress routes should be provided based on projected dose levels in corridors and hallways for the sample team obtaining the sample to insure ALARA is adhered to.

5.4.2.8 & Post Accident Vent Stack Gas and Particulate Effluent Sampling
5.4.2.9 and Analysis

A review was made of the post-accident gas and particulate effluent sampling and analysis procedures based on the guidance of NUREG-0737. Procedure AD 1850.04, Post-accident Radiological Sampling and Counting, Section 4.5.2 contained precautions and estimated dose rates in the station vent sampling area. Section 5.2 of the procedure indicates actions to be taken to obtain a particulate or iodine sample. Calculations to determine xenon (Xe) concentration were contained in Attachment 1. Procedures for counting the particulate and silver zeolite samples were contained in Section 5.4. Data reduction necessary to determine activities of principal gamma emitters was contained in RC 4502.00, Gamma Spectral Analysis.

Efficiency charts for counting geometries and data tables for analysis of the sample were contained in the counting room manual. Provisions were made in the procedure to assure that high range portable survey instruments were used by the sample team prior to entry into the sample area. Provisions for labeling the sample and analysis work sheets were contained in the counting room manual. The sample could be analyzed onsite within two hours. In the event the emergency vent monitors were off scale, alternate methods for estimating Xe releases are described in the counting procedure.

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

5.4.2.10 &
5.4.2.11 Liquid Effluent Sampling and Analysis

A review was conducted of the post-accident liquid effluent sampling and analysis procedures based on the guidance of NUREG-0737. Normal sample procedures and equipment were used to obtain liquid samples. Sampling of the steam generator let down lines and radwaste systems could be sampled in the normal sample areas. High level samples could be analyzed using efficiencies and geometries indicated in RC 4502.00, Gamma Spectral Analysis.

Provisions were made in the procedures to assure that high range portable survey instruments were used by the sample team members prior to entry into sample areas. Provisions for labeling the samples and analysis work sheets were contained in the counting room manual. Samples could be analyzed onsite within two hours.

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

5.4.2.12 Radiological and Environmental Monitoring Programs

Procedures and equipment for offsite monitoring were identical to the equipment contained in Section 5.4.2.1 of this report. Procedures

which pertained to collection and analysis of offsite samples are contained in Procedure AD 1850.05. A complete radiological monitoring program for the site had been established. Ambient radiation measurements were determined using a network of 60 environmental Thermoluminescent Dosimeters (TLDs). A network of 25 environmental dosimeters were used to supplement the TLD monitoring system. During emergency situations the environmental dosimeters could be collected, read directly, recharged, and replaced. In addition, 25 environmental badges were placed in onsite and offsite locations. All environmental monitoring devices were collected on either a monthly or quarterly basis and sent to Hazelton Environmental Sciences for evaluation.

Environmental soil, sand, shellfish, fish, meat, vegetables, fruits, and pasture samples were sampled normally as part of the environmental monitoring program. Composite water samples were collected weekly for analysis by Hazelton. Weekly, monthly, and yearly reports were furnished by Hazelton. In an accident, environmental samples could be taken and analyzed by Hazelton on a priority basis.

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

5.4.3 Protective Actions

5.4.3.1 Radiation Protection During Emergencies

Emergency Plan Station Supporting Procedures include one titled Protective Action Guidelines, Administrative Procedure AD 1827.12. This enumerates a set of guidelines to be followed in determining protective actions to be taken in the event of emergencies involving radioactivity releases. For saving human life, up to 100 rems of whole body dose can be voluntarily received as specified in Procedure AD 1827.16.1. Personnel dosimetry, dose assessment, and exposure records are also covered in the emergency supporting procedures. Procedures for overexposure management and control are also addressed in the supporting procedures. Procedures for positive access control are found in the plant Radiation Safety Operating Procedures.

Procedures include use of respirators as described in the Chemestry and Health Physics Manual, Procedure PT 5199.19. Also, Procedure HP 1605.07 describes the methods used to refill the air bottles using an Eagle 5000, high pressure air compressor. Authorization for persons to reenter high radiation areas for search and rescue activities including retrieval of equipment and/or persons is specified in the Radiation Protection Manual, Procedure No. 1601.01. Permission must be given in writing by the Station Health Physicist or the Assistant Plant Superintendent.

Based upon the above findings, this portion of the licensee's program is acceptable.

5.4.3.2 Evacuation of Owner Controlled Areas

Action levels that can initiate a station evacuation are described in the Emergency Plan. Primary and secondary evacuation routes are listed in separate drawings as part of the Emergency Plan and in the Station Supporting Procedures to the Emergency Plan, specifically Procedure No. AD 1827.11. Locations of the several assembly areas are also specified in this procedure. Oral announcements will be made over the Public Address system following one of these types of Station Alarms as specified in the Emergency Plan and the Station Supporting Procedures.

Procedure No. AD 1827.11 states that in a station evacuation, personnel will proceed out of the buildings to the Gate House for evacuation from the station. Those who may have been exposed to radiation will keep assigned monitoring devices until they have been checked by C&HP at the ECC, or other designated locations.

For containment evacuation, an alarm is sounded and personnel immediately proceed to the personnel lock at Level 603 and/or evacuate through the equipment hatch at Level 603, if open. A voice announcement of actions to be taken is then given over the PA system by the Shift Supervisor. The supervisor of each group shall assure that his personnel have been accounted for before the inner door is secured. Evacuated personnel are checked for contamination in accordance with Procedures HP 1602.01 and 1604.01 which include personnel monitoring and decontamination.

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

5.4.3.3 Personnel Accountability

If the emergency declared demands partial or complete evacuation of onsite personnel, Procedure No. EI 1300.06 states that the OSC shall contact the Guard Force to ask for personnel accountability. The Nuclear Security Supervisor will make a phone call to the Central Alarm Station (CAS) and ask for a computer printout. If persons are found missing, the OSC Manager will initiate a search according to Procedure AD 1827.16, Search and Rescue.

Similar procedures for notifying the Guard Force is found in the Alert, Site and General Emergency Implementing Procedures, except there it directs the Guard Supervisor to implement the Industrial Security Plan Procedure, AD 1808.00. The inspector reviewed this procedure and found that it encompasses a wide range of security functions and equipment. The only reference to personnel accountability states that the Nuclear Security Supervisor will initiate personnel accountability on direction from the EDO or Shift Supervisor.

The Nuclear Security Supervisor interviewed by the inspector stated that all personnel within the protected area could be accounted for within 30 minutes using the computer's capability. This does not include the Training Building or the Administration Building which are outside the protected area. If the computer were inoperative and badges had to be manually accounted for, this would not be completed in 30 minutes.

Based upon the above findings, this portion of the licensee's program is acceptable; however, the following item should be considered for improvement:

- The Industrial Security Plan Procedure, AD 1808.00 should be revised to include specific steps involved in personnel accountability, how this accountability is maintained throughout the emergency and how missing personnel are accounted for. A cross reference with Supporting Procedure, Search and Rescue, AD 1827.16 should be included.

5.4.3.4 Personnel Monitoring and Decontamination

The inspectors reviewed the following procedures regarding personnel monitoring and decontamination: HP 1602.01, External Personnel Monitoring; HP 1604.01, Personnel Decontamination; AD 1827.04, Overexposure/Internal Contamination, and AD 1827.14, Area and Equipment Decontamination. The procedures for External Personnel Monitoring (HP 1602.01) are monitoring procedures that are to be utilized during normal conditions. While it may be true that the techniques defined will apply to both normal and emergency conditions, emergency conditions require additional specific information on how the personnel monitoring function will be coordinated for emergency operations teams such as RMT's, First Aid/Rescue and Maintenance Teams. Emergency procedures should also be established for TSC and ECC personnel.

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

- Revise, or eliminate HP 1602.01 (External Personnel Monitoring) from the Emergency Plan Station Supporting Procedures. Substitute Emergency personnel monitoring procedures which describe the personnel monitoring functions during emergencies, including provisions for monitoring TSC, ECC, control room and OSC personnel.

5.4.3.5 Onsite First-Aid/Rescue

The inspectors reviewed the following procedures in regard to onsite first aid and rescue: AD 1827.01, Annual Radiation Medical Exercise; AD 1827.02, Medical Treatment of Injuries; AD 1827.16, Search and Rescue, and Administrative Memorandum 38, First Aid Team. These procedures discuss the method for activating a first aid or rescue

team, the procedures to be followed by team members, and the interaction with offsite medical agencies. Information on acceptable dose limits for lifesaving purposes are defined. Instructions are provided on decontamination procedures and priorities. These procedures require that a Health Physics Technician accompany an injured individual with radiological complications in the ambulance to the hospital.

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

5.4.4 Security During Emergencies

Emergency duties for the Guard Force are listed in the Industrial Security Plan, Procedure No. 1808.12.9. These include directing evacuees to safe areas and collecting their ID badges and dosimeters, insuring rapid access by offsite support groups, assisting in communications, and directing vehicle traffic to and from the station.

For a station evacuation the Guard Force's duties and responsibilities are specified in the Emergency Plan Supporting Procedure No. AD 1827.11.2. This procedure states that although the Protected Area gates are opened for evacuation, security shall be maintained according to the Industrial Security Plan, AD 1808. Also it emphasizes that the guard shall not delay the evacuation or require those leaving to sign the visitor's log. The procedure states that normal security procedures will be followed upon re-entry of personnel.

The inspector interviewed three Guards and one Guard Supervisor relating to their responsibilities and actions during an emergency. Information received indicated these personnel knew their duties in an emergency. The only weakness observed by the inspector was an irregular pattern in receiving training, though all had some emergency training within the last year.

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

5.4.5 Repair/Corrective Actions

Repair and corrective actions will be implemented by the Maintenance Director at the OSC. There is no specific implementing procedure which addresses this area. The Maintenance Engineer coordinates and directs maintenance and equipment modification activities in support of Station operation.

Radiation monitoring teams, first aid support, and fire fighting support are among other teams which are responsible for repair/corrective actions in conjunction with their emergency functions. These teams and any others required for repair/corrective actions are directed by the Maintenance Engineer as requested by the EDO.

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

5.4.6 Recovery

Section 9.0 of the Emergency Plan describes the licensee's actions during the recovery phase after any Site or General Emergency. Once the emergency situation has been stabilized and the station is ready to enter the reentry and recovery phase, the Assistant Station Superintendent shall assume the role of Recovery Manager.

Emergency Plan Implementing Procedure EI 1300.11, "Recovery" outlines the course of action for placing the plant on an anticipated long term recovery process in general terms of: Recovery Requirements, Recovery Considerations, and Radiological Considerations.

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

5.4.7 Public Information

The Public Relations Staff coordinates all press and media briefing, public information activities, and local, State, and federal public information efforts. The Public Information Coordinator supervises and participates in development, preparing, coordinating, issuing, and disseminating of information concerning the licensee to the news media and the public in the event of an accident at Davis-Besse.

The Toledo Edison "Public Information Policy and Procedure" manual adequately describes how the public information activities will be adhered in an emergency. The specific means for disseminating public information have been developed. An ongoing program for periodically informing the public on key emergency preparedness and radiological concepts has been established. Rumor control methods have been established.

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

5.4.8 Fire Protection

Notification of a fire within or outside of the reactor could arise via employee observation and/or annunciator alarm. Should an employee, in the absence of an alarm, report the fire he would:

1. Call the control room;
2. Report the location;
3. Give particulars about the fire, and
4. Continue contact with the control room concerning the status of the fire.

Should fire awareness arise from annunciation in the control room, the reactor operator would receive signals from:

1. Either two or four annunciators;
2. The control room fire bell alarm;
3. Computer printout noise, and
4. Visual observation of the CRT fire alarm information.

The immediate reactor operator actions would include:

1. Review of the CRT/computer printout which would provide identification of the fire panel number;
2. Silence the alarm(s),
3. Determine the location of the alarming panel by using the single-page key card, or if related to the control room, from the control room panel;
4. Dispatch, under the Shift Supervisor's orders, a fire watch to find the alarming room detector and/or fire, and
5. Send a fire fighting team and call the fire department.

Walk-throughs with the Shift Supervisor and his operators revealed that there were no written detailed procedures on the new equipment. Further, although the operators were able to use the system and had developed a one-page check list procedure, they had had no formal training on the new computerized fire protection alarm system.

Discussions with the fire protection coordinator revealed that comprehensive procedures had been developed and approved, and would be issued within the month. In addition, training on the procedures and equipment would follow issue of the procedures.

The inspectors examined the fire panel board in the control room attempting to understand the logic of the color code identification system employed to differentiate between "critical" and non-critical fire locations. Red pre-marked placards appeared to be critical locations and blue indicated non-critical locations. All systems/locations covered by Technical Specifications were marked by TS. The logic of the choice between red and blue placards was not clear to the inspectors, especially since the cable spreading room was coded as a blue TS location (non-critical).

Followup discussions with the fire protection coordinator revealed that the Architect Engineer firm had an apparently systematic approach for the color-code, which was based, in part, on redundancy of critical equipment. Nevertheless there appears to be a potential for classification error that should be evaluated by station system/management staff members.

The new fire detection/annunciation system currently has a direct tie-in to the CAS security CRT which is located immediately adjacent to the reactor control room. This portion of the system could interfer with security operations, so the system will be changed to allow the security CRT to "tune in" fire data only if the control room CRT fails.

The inspections/tests of the fire protection system complies with Technical Specifications, where applicable, and is conducted on all portions of the licensee's system. Smoke detectors are tested every six months. The fire suppression systems are tested either semi-annually or annually. Wet systems, with annunciators only, are tested quarterly.

Fire pre-plans for equipment involved in all hot and cold shutdown operations have written procedures. Their procedures are being re-written to include updated information on the new computerized fire protection system. These procedures will be revised within the year in accord with agreed commitments. Other non-critical portions of the licensee's facilities will also have complete fire plans. While such pre-plans are not required, the licensee has determined that the benefits of such a complete program are many.

Based upon the above findings, this portion of the licensee's program is acceptable. However, the following item should be considered for improvement:

- A comprehensive review by the licensee's technical/management staff should be made of the red-blue color coding/annunciation portion of the newly installed fire protection system.

5.5 Supplemental Procedures

5.5.1 Inventory Operational Check and Calibration of Emergency Equipment, Facilities, and Supplies

The inspectors reviewed the licensee's procedures for maintaining emergency equipment and facilities in an operable and useable state. In addition to periodic plant-wide emergency drills, the licensee conducts quarterly inventory and operational checks of equipment reserved for emergency use. Instruments dedicated to emergency use are rotated every six months for calibration. The Chemistry and Health Physics staff is responsible for conducting the inventories and rotating instruments for calibration.

Based upon the above findings, this portion of the licensee's program is acceptable.

5.5.2 Drill and Exercises

A review was made of the drills and exercise program to determine compliance with the planning standard of NUREG-0654, in developing and maintaining key skills and corrective deficiencies in emergency response capabilities. The review included discussions with the Emergency Planning Coordinator (EPC), review of records and reports of the 1981 small scale exercise and the 1980 full scale exercise. The records contained critiques of the exercises by local government agencies, NRC, and FEMA. The drills were administered by the EPC in accordance with scenarios developed by a Toledo Edison consultant.

The backshift was exercised during the 1980 drill conducted during November of 1980. Communications drills were conducted monthly, these included tests of telephone loops and radio communications. Fire drills were conducted annually. Medical drills with participation by the REMS Corporation of Albuquerque, New Mexico were conducted annually. Periodic radiological and health physics drills were conducted by supervisors to familiarize technicians with emergency sampling equipment.

Offsite agencies were invited to and participated in both the 1980 and 1981 exercises. Provisions were made for handling news/media coverage of drills and exercises in the new administration building.

Emergency Plan Supporting Procedures reviewed included: AD 1827.01, Annual Radiation Emergency Medical Exercise, and AD 1827.17, Emergency Call system. The results of the review indicated that an adequate drill and exercise program was being conducted to maintain key skills and evaluate major portions of the emergency response capability.

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

5.5.3 Review, Revision, and Distribution of Emergency Plan and Procedures

Section 8.3 of the Davis-Besse Nuclear Power Station Emergency Plan indicates the methods established for reviewing and updating the Emergency Plan and Implementing Procedures. The Emergency Planning and Preparedness Supervisor is responsible for the periodic review and update of the Emergency Plan and Procedures. This review is indicated as being ongoing, however, the plan shall at least be reviewed and updated annually by the Emergency Planning Group. All emergency procedures are prepared, distributed and updated in accordance with Davis-Besse Nuclear Power Station Administrative Procedures, which require an annual review and update.

In addition, the Emergency Planning Group updates names and telephone numbers of emergency response personnel on a monthly basis. The Emergency Plan and Procedures are controlled documents.

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

5.5.4 Audit

Section 8.3 of the Emergency Plan indicates that the TECo Nuclear Review Board (CNRB) is responsible for auditing the plan at least every two years, to determine compliance with the TECo QA procedures. This procedure is in conflict with 10 CFR 50.54(t), which requires an emergency preparedness audit at least every 12 months by persons who have no direct responsibility for implementation of the emergency preparedness program.

The inspectors interviewed a staff member of the Quality Assurance (QA) program, who outlined the program's functions. The audit requirements of 10 CFR 50.54 (t) were understood. A program has been developed to independently audit the emergency preparedness program. The last audit was conducted in July of 1981. An annual audit has been conducted on the emergency preparedness program since 1976.

The QA audit of the Emergency Plan and Procedures is ongoing and done routinely as a part of their document review program.

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

6.0 Coordination with Offsite Groups

6.1 Offsite Agencies

Offsite agencies were contacted by the inspectors to determine the adequacy of support they would provide to the Davis-Besse Nuclear Plant in the event of a nuclear emergency. Agencies contacted are discussed below individually.

6.1.1 Carroll Township Volunteer Emergency Medical and Fire Service, Incorporated

The inspector interviewed the Fire Chief and the Assistant Fire Chief to assess the fire department's and the ambulance service's capabilities to respond as the primary offsite agency to an emergency at the nuclear plant. Both were knowledgeable of their responsibilities and the interface required with emergency personnel at the plant. A copy of the site emergency plan is available.

Training has been provided to both the fire department personnel and those assigned to the one ambulance available. Both segments have participated in drills and personnel have been given orientation tours of the site. The fire department has six SCBA units available. The ambulance has a two-way radio, and a radiation safety technician from the site rides along with the ambulance to the hospital. Two patients can be transported at one time. Adjacent townships can provide backup ambulance service if needed.

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

6.1.2 Magruder Memorial Hospital

The inspector interviewed the Assistant Hospital Administrator and the Director of Nursing to determine the adequacy of the hospital to respond to a plant emergency when licensee's employees are received as patients. The nursing and medical staff have received training within the last year and have also participated in drills initiated by the licensee. The most recent drill was held on November 13, 1981.

The autopsy room of the hospital is used as a receiving room for contaminated patients. A separate exhaust filter is utilized for this room. Waste liquids are collected in a portable drum for disposal. Radiation protection equipment on hand includes dosimeters, film badges, radiation signs, radiation area ropes, and three radiation detection instruments. A copy of the licensee's emergency plan is available as well as the hospital's own emergency plan for receiving and treating contaminated patients.

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

6.1.3 Sheriff's Department, Ottawa County and the Ottawa County Disaster Services Agency Coordinator

The Ottawa County Sheriff and the County Coordinator were interviewed by the inspector to determine their role in response to a nuclear emergency at the plant. The Sheriff gives permission to activate the public warning system from the encoder at the dispatcher's office. First a call is received from the plant which must first be verified for authenticity before the siren system is activated. The Sheriff's police function primarily for traffic control and road blocking. The Emergency Broadcasting System (EBS) and National Weather Service are telephoned by the Sheriff. The inspector reviewed the procedure followed for nuclear emergency notification and the one to activate the encoder which sets off the sirens. Also these were demonstrated by the dispatcher on duty. Both aspects were considered satisfactory by the inspector.

The County Coordinator confirmed that 22 Tone Alert Radios have been installed in schools, a hospital, a nursing home, and police and fire departments. Also five County officers including the Sheriff and the County Coordinator are being assigned pagers which will notify them in case of emergency. The County Coordinator has the responsibility to contact other local, county, and state support agencies. An official training program is being planned for the County Coordinator sponsored by the licensee. The inspector concluded that a good rapport exists between the licensee and this supporting agency.

Based on the above findings, the portion of the licensee program is acceptable.

6.1.4 Mutual Assistance Agreement

A mutual assistance agreement has been signed between the licensee and Consumers Power Company, Cincinnati Gas and Electric Company and the Cleveland Electric Illuminating Company. Additional technical skills and equipment can be made available if needed in an emergency.

6.1.5 Letters of Agreement

The inspector's review of the licensee's files confirmed that all Letters of Agreement are current, less than three months old, and had been signed by a responsible management representative of the support agency. The areas of responsibility, capability and delineation of authority have been specified satisfactory in these letters.

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

6.2 General Public and Transient Population

6.2.1 Information Distribution

Nuclear Newsletters are published quarterly and mailed to all resident box holders in the Plume Exposure Pathway by zip code. The newsletter is intended to provide residents near Davis-Besse with information on the plant, nuclear energy and emergency preparedness. A questionnaire is included in the mailing for feedback. Residents have been advised of the areas that could be affected, how they would be notified of an incident, and specific evacuation information. Brochures have also been distributed to area motels, hospitals and other public buildings. The local telephone books have full page information notices of the area nuclear emergency plan. General instructions on evacuation and special instructions for Island inhabitants and mobility impaired people are included.

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

6.2.2 Prompt Public Notification System

Initially the licensee had installed only four sirens within the five mile EPZ. To comply with NRC requirements, 38 more sirens were installed within both the five mile EPZ and ten mile EPZ for a total of 42 sirens. Installation was completed on January 27, 1982. Testing of the sirens was performed on January 29, 1982, and witnessed by the NRC resident inspectors. Thus the licensee met the February 1, 1982, deadline as specified in the Amendment to 10 CFR Part 50, Appendix E, published in the Federal Register, December 30, 1981.

The testing of the siren systems determined that five of the 42 sirens did not function. The licensee notified Region III of these deficiencies in the system and has 120 days to correct them before enforcement action will be taken.

As part of the prompt public notification system, 22 Tone Alert Radios have been placed in various locations as reported in Section 6.1.3. A continuous testing program of the siren system and the Tone Alert

Radios is being developed by the licensee and includes monthly tests of the system in conjunction with the monthly testing of other emergency communication equipment.

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

6.3 News Media

A Program has been developed and implemented to train news media representatives in nuclear power terminology, concepts and emergency plans. Two training sessions were held in 1981, one on July 29 and the other on October 21 and 22. Annual repeats of this training are scheduled.

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

7.0 Drills, Exercises, and Walk-throughs

7.1 Drills and Exercises

All drills/exercises required by the plan and procedures have been conducted in accordance with established criteria and coordinated with offsite agencies.

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

7.2 Walk-through Observations

7.2.1 Dose Calculation Walk-through

The inspectors conducted walk-throughs with all Shift Supervisors. An integral portion of these walk-throughs was dose calculations. Scenarios were given to each Shift Supervisor, which included; postulated emergency event, specific source terms, instrument readings and meteorological parameters. Programmed calculators and hand calculation dose projections were made by the Shift Supervisor and/or their Assistant Supervisor. These results compared favorably with computer analyses that had been obtained by the inspectors prior to the walk-through.

Based upon the above findings (also see Section 5.4.2) this portion of the licensee's program is acceptable.

7.2.2 Protective Action Decision Making Walk-through

The inspectors conducted walk-throughs with all Shift Supervisors. An integral portion of these walk-throughs was protective action decisions. The inspectors led the Shift Supervisors through a

variety of scenarios that required prompt, accurate decisions to protect either the plant and/or people onsite, and offsite populations.

The Shift Supervisors indicated to the inspectors that they were capable of making the proper decision in all simulated cases except seismic annunciator-interpretation and actions. This finding is discussed in Section 5.2.

7.2.3 Emergency Classification Walk-through

The inspectors conducted walk-throughs with all Shift Supervisors to ensure they understood Procedure EI 1300.01, Emergency Plan Activation. Scenarios were given to each Shift Supervisor. As the postulated emergency event progressed, plant conditions and instrument readings were provided. In each case the Shift Supervisors were capable of properly classifying the emergency.

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

7.2.4 Post-accident Sampling Walk-through

The Inspector conducted walk-throughs with chemistry and Health Physics Testers and Technicians to ensure they had an understanding of the Post-accident Sampling System and could take the samples in accordnace with procedures and ALARA. In each case the tester and technician were very capable of taking the sample according to procedures.

Based on the above finding this portion of the Licensee Program is acceptable (Sections 4.1.1.5, 4.1.1.6, 4.1.1.7, and 4.4.4.8).

8.0 Licensee Actions on Previously Identified Items Related to Emergency Preparedness

Item III A.2., Description 4, TMI Action Plan Requirements. The licensee has installed all necessary meteorological hardware and software in the Emergency Response Facilities. This is further discussed in Section 4.2.1.4 of this report. This item is closed.

9.0 Persons Contacted

TECo Personnel

W. Johnson, President and Chief Operating Officer
*R. Crouse, Vice President Nuclear
*T. Murray, Station Superintendent
*J. Hirsch, Emergency Planning Supervisor
*D. Briden, Chemist and Health Physicist
*T. Myers, Nuclear Licenisng Manager
*J. Lingenfelter, Technical Engineer
*R. Durdel, Associate Technial Assistant Emergency Planning

*G. Reed, Energy Consultants Inc.
*B. Werner, Administrative Coordinator
P. Carr, Maintenance Engineer
R. Buehrer, Public Relations Coordinator
M. Horne, Health Physics Supervisor
R. Scott, Rad. Chem Supervisor
L. Harder, Chemistry and Health Physics Tester
L. Statler, Plant I&C Systems Engineer
D. Eldred, Maintenance Engineer
T. Isley, Maintenance Specialist
C. Domeck, Nuclear Engineering Manager
L. Simon, Operations Supervisor
L. Bonkers, Chemistry and Health Physics Tester
W. Phillips, Nuclear Security Supervisor
G. Lammon, Shift Supervisor
J. Caldwell, Security Training Instructor
W. Nissen, Fire Protection Coordinator
B. Franta, General Nuclear Training Supervisor
T. Powers, Lead Instrument Control Engineer
J. Higley, Safety Coordinator
D. Poage, Quality Engineer
B. Bins, Records Services Supervisor
S. Wise, Assistant Shift Supervisor
T. Wagner, Assistant Shift Supervisor
R. Flood, Shift Sypervisor
D. Eldred, Assistant Shift Supervisor
T. Lehman, Shift Supervisor
D. Ricci, Shift Supervisor
T. Isley, Assistant Shift Supervisor
J. Michaelis, Shift Supervisor
R. Mizik, Assistant Shift Supervisor
C. Rider, Senior Tester C&HP
T. Wakulenko, Group Leader, C&HP
D. Jazwiecki, Senior Tester, C&HP
R. Hofer, Senior Tester, C&HP

In addition to the above employees several Toledo Edison Security Officers were interviewed regarding their duties during emergencies.

*Denotes those present at this exit interview.

Non TECo Personnel

J. Crosby, Fire Chief, Carroll Township
L. Johannsen, Assistant Fire Chief, Carroll Township
D. Norwine, Assistant Hospital Administrator, Magruder Memorial Hospital
M. Campbell, Director of Nursing, Magruder Memorial Hospital
J. Crosser, Sheriff Ottawa County
J. Greer, Ottawa County Diaster Services, Agency Coordinator

10. Exit Interview

The inspectors and senior management from NRC Headquarters and Region III met with licensee representatives (denoted in Paragraph 9) at the conclusion of this appraisal on February 19, 1982. The inspectors summarized the scope and findings of its appraisal.