U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Report No. 50-263/82-05(DEPOS)

Docket No. 50-263 License No. DPR-22

Licensee: Northern States Power Company
414 Nicollet Mall
Minneapolis, MN 55401

Facility Name: Monticello Nuclear Generating Plant

Inspection At: Monticello Plant Site, Monticello, MN

Inspection Conducted: March 15-25, 1982

Inspectors: J. A. Pagliaro (Team leader) — 4/23/82

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Inspection Summary

Inspection on March 15-25, 1982 (Report No. 50-263/82-05(DEPOS))
Areas Inspected: Special announced appraisal of the state of onsite emergency preparedness at the Monticello Nuclear Generating Plant involving seven general areas: Administration of the Emergency Preparedness Program; Emergency Organization; Training; Emergency Facilities and Equipment; Procedures Which Implement the Emergency Plan; Coordination with Offsite Agencies; and Exercises and Drills. The inspection involved 438 inspector-hours onsite by three NRC inspectors and two consultants.
Results: No items of noncompliance, deviations or significant deficiencies were identified.

1.0 Administration of Emergency Plan

(1.1, 1.2, 1.3 and 1.4)

At the site, the Plant Manager serves as the Emergency Director, and has the prime responsibility and authority during an emergency. He can immediately initiate any emergency action including making protective action recommendations to those responsible for implementing offsite emergency measures. His counterpart at the corporate level is the Emergency Manager. A line of succession, by name, is established to succeed the Plant Manager including as first alternate, the Plant Superintendent, Engineering and Radiation Protection.

The site Emergency Planning Coordinator (EPC) is the Radiation Protection Associate. He is responsible for Emergency Planning functions, including the development and updating of the Monticello Emergency Plan and implementing procedures. The Radiation Protection Associate is also delegated responsibility for radioactive materials shipment and ALARA coordination. He reports directly to the Superintendent, Radiation Protection, for radioactive materials shipment and ALARA coordination and to both the Superintendent, Radiation Protection, and the Plant Manager for Emergency Planning Coordination. The Superintendent, Radiation Protection, serves as the Radiological Emergency Coordinator who functions as part of the onsite Emergency Response Organization and reports to the Technical Support Center (TSC) when it is activated. At the corporate level the Manager, Environmental Services, serves as the Emergency Planning Coordinator. His emergency organizational title is the Administrator-Emergency Preparedness. His authority for this function was delegated in a letter (March 1980) from the General Manager, Nuclear Plants, to all corporate level managers.

Plans and procedures at both the corporate and site level interface as the inspector's reviews indicated. Also, there were some joint training sessions held which involve both licensee entities. However, Professional training courses have not been provided for corporate and site Emergency Planning Coordinators except for practice drills. In previous practice drills, parts of both the corporate Headquarters Emergency Center (HQEC) and the site's Technical Support Center (TSC) have been activated as well as other facilities at each location depending on the nature of the practice exercise or drill.

Selection criteria for emergency organization members are established largely by management decision and job qualifications. Through procedural reviews and direct interviews the inspectors determined that those chosen at the management and administrative levels were qualified.

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

- Professional training courses should be provided for corporate and site Emergency Planning Coordinators.

2.0 EMERGENCY ORGANIZATION

2.1 Onsite Organization

The emergency onsite organization is described in Section 5.0 of the Plan which includes both a functional and an onsite emergency organization chart. These two charts are attached to this report as Figure 1 and Figure 2. The position descriptions and the organization are adequate from both a management and a functional standpoint.

The Site Superintendent assumes the responsibility of the Emergency Director (ED) at the onset of any emergency condition. When the designated ED arrives, the Site Superintendent is relieved of the ED responsibility. Through interviews and discussions with the Emergency Director, Site Superintendents, the Radiological Emergency Coordinator, OSC Coordinators, TSC Coordinators, the Shift Emergency Communicator and the Supervisor, Security and Services, the inspectors concluded that these emergency management personnel were qualified, knowledgeable and trained in their assigned emergency response functions.

The Emergency Plan Implementing Procedures (EPIP's) provide for the Emergency Director to serve as an overall emergency coordinator who is available onsite at all times. He is equipped with a radio-pager. His authority and responsibility are delegated to the next individual in the line of succession, along with the radio-pager, when he is unavailable.

However, certain types of responsibilities cannot be delegated to others by the Emergency Director. These include the recommendation of protective actions to State and local governmental units.

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

2.2 Augmentation of Onsite Emergency Organization

The following corporate emergency response personnel were interviewed by the inspection team:

Emergency Manager (4)
Recovery Manager
Administrator Emergency Preparedness
Assistant Administrator Emergency Preparedness
Environmental and Regulatory Activities Department (ERAD) Manager

These individuals plus one EOF Coordinator interviewed at the training center demonstrated to the inspectors that they were trained, knew their functions and could perform as required in an actual plant emergency.

Both the corporate and the site plans include provisions for supplementing the radiation protection and monitoring program if accident conditions continue beyond 24 hours. Corporate authority to activate this support is through the Power Production Management, specifically the Senior Vice President, Power Supply. He relays corporate policy decisions through the

Corporate Emergency Organization. The contractor, General Electric Company, is specified in the corporate plan as being the prime vendor, who could respond for assistance if requested by the Emergency Manager. Bechtel Power Corporation as the architect engineers is also specified in Corporate EPIP 1.1.14, Revision 2. Letters of Agreement have been completed with these vendors, a laboratory services organization, State and local governmental agencies, and police and medical support organizations. One letter signed by Bechtel Power Corporation should be more specific in responsibilities and limits on actions by that organization in providing support services to the licensee.

To help assure notification of key emergency response personnel needed to augment shift staffing, a radio receiver has been placed in the homes of approximately 40 Monticello employees. This is part of the Radio Alert System which includes a transmitter at Monticello which initiates the announcement, which is a prerecorded tape. The transmission system located at the TSC consists of: (1) Message recorder, (2) Message transmitting unit, (3) Microphone, (4) Telephone Answering Unit, (5) Telephone, and (6) Code Selector. The receiver in the employees' homes includes a red light when the message is not received directly by a person answering the call. A recorded message is given when the person activates the radio receiver.

The licensee has demonstrated, through a drill using a telephone call system with documentation of time required for the person to reach the site, that minimum staffing can be accomplished as indicated in Table B-1 of NUREG-0654.

Currently, the licensee has the following minimum shift staffing:

- One SRO
- Two Control Room Operators
- Two Auxiliary Operators
- One Dedicated Shift Emergency Communicator
- One Radiation Protection Specialist
- One STA

This makes a total of eight emergency response workers available 24 hours per day. A chemistry-trained individual for emergency chemistry/radiochemistry is still needed. The licensee plans to provide a chemistry technician for each shift by July 1, 1982. Additionally, the licensee plans to assign another Senior Reactor Operator to each shift by February 1983. This has been documented in letters to NRR dated December 10, 1981, and February 5, 1982, requesting an exemption from the requirements of NUREG-0737, Item I.A.1.3.2 until February 15, 1983.

Once the Emergency Plan is revised to reflect the above capability, the inspector shall deem the minimum shift staffing as meeting the regulatory positions of Table B-1 of NUREG-0654. This is an open item.

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

- The letter of agreement for Bechtel Power Corporation should be changed to include more specific terminology regarding responsibilities.

3.0 TRAINING/RETRAINING

3.1 Program Establishment

The licensee has a formally documented and approved emergency plan training/retraining program. This program is specified in EPIP 1.2.1, Emergency Plan Training, and further described in an Emergency Plan Training Program document issued in October 1981. Criteria for instructor qualifications are defined. The training/retraining schedule is specified on an annual basis. The emergency training categories are designed to address each emergency procedure.

Offsite support personnel (i.e., sheriff, fire department, and ambulance personnel) are invited annually by the licensee to participate in the onsite familiarization/training program. In addition, other local and State agency personnel are invited to attend seminars. News media are also invited to attend emergency preparedness seminars and participate in exercises. Approved formal lesson plans are established for each training category, have performance objectives, have adequate records and have specially designed viewgraphs for presentations. The training program includes classroom lectures and hands-on training for special instruments, kits and equipment.

Radiological condition changes that might be encountered during postulated emergencies are given. Communications are described and practiced. Organization, responsibilities and authorities are also covered in the emergency training program.

Red Cross Multi Media training is given by a Red Cross Instructor. Training for non-licensee augmentation personnel (e.g., contractors, radiation technicians, vendors, etc.) would be given prior to their assignment to duty, or else they would be escorted onsite continuously.

When changes are made to the emergency plan or procedures, a routing of such changes is made to all members of the emergency organization. They are asked to read and understand all changes, and acknowledge their understanding via sign off on the routing slip. This interim training technique is used between the required annual training sessions to assure that members of the emergency organization are aware of all program changes.

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

3.2 Program Implementation

The inspectors reviewed the training record program and found that, for the most part, training and examinations had been adequately applied to the licensee's emergency preparedness program. Three "on-shift" radiation technicians, however, had not received training on all EPIP changes that had been completed in the last 30 to 60 days. Walk-throughs with these

shift technicians verified that such training was needed to ensure adequate inplant and offsite radiological surveillance.

Walk-throughs were also conducted with station emergency organization directors, security personnel, site superintendents, radiation chemistry technicians and other licensee personnel who would participate in emergency situations. These walk-throughs verified, for the most part, that station personnel knew and understood their roles and how to implement them during emergency situations. For example, the radiation chemical technicians on call have been trained to operate the computerized offsite dose assessment program and to hand calculate the same information should the computer fail to operate. These technicians were able to make the computations without referring to the procedures, within 15 minutes using the computer. Thus, the efficacy of the training was adequate. However, the number of persons trained on dose assessment (see Section 5.4.2) was initially judged to be inadequate for the first 30 to 60 minutes of a rapidly escalating radiological emergency situation, before the TSC and/or EOF could be fully manned.

Walk-throughs with the Site Superintendents showed that they were all knowledgeable in the use of the operating, annunciation, abnormal and emergency plan implementing procedures for mitigation actions, classification of events and the prompt notification of the appropriate site, corporate, state and federal agencies and support personnel. While all Site Superintendents knew what the EAL's for protective actions were and how to use the EAL's for recommending protective actions, they were not familiar with the application of the dose projections provided to them by the Radiation Chemical Technician on call (see Section 5.4.2).

While the inspectors were still onsite, the licensee:

- Initiated expanded personnel training for shift personnel on dose assessment personnel.

- Modified the computer dose projection printout system to provide assumed default times for isolation of releases and recommendations on protective actions for the public for use by the Site Superintendents.

Prior to leaving the site the inspectors determined that adequate dose assessment training was provided for shift personnel to cover rapidly escalating (30-60 minutes) radiological emergencies.

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

- Onshift radiation technicians should be trained on all changes to EPIP's covering radiation protection and radiological surveillance activities within 30 days of issuance.

- The number of qualified persons available on shift for dose assessment calculations on both the computer and hand calculational methods should be expanded.

- Upgrade the training program for the Site Superintendents/Shift Supervisors to include a direct interface with dose assessment personnel to ensure that these personnel are familiar with both the format of the population dose projections and the application thereof.

4.0 EMERGENCY FACILITIES AND EQUIPMENT

4.1 Emergency Facilities

4.1.1 Assessment Facilities

4.1.1.1 Control Room

A review was made of the Control Room to determine its acceptability under accident conditions. The review included discussions with the Radiation Protection Associate, Shift Supervisors, Assistant Plant Equipment Operators, Plant Equipment Operators, Lead Plant Equipment and Reactor Operators and tours of the facility. The results of the review indicated the following:

- The Control Room ventilation is normal building ventilation with no provision for filtering airborne contaminants.

- The high range monitoring instrument had been removed for repairs. No replacement instrument was provided.

- Respiratory protection was initially inadequate (see Item 4.2.2.1).

- No high range dosimeters were available to Control Room personnel.

- Sufficient supplies of protective clothing such as gloves, anticontamination suits, head covers, and plastic shoe covers were not available for Control Room personnel.

The following corrective actions were progressing or completed during the appraisal to improve the above conditions:

- An isolated ventilation system is in the process of installation which will contain prefilters, HEPA and charcoal filters. All duct work appears to be seismically qualified. This system is scheduled to be operable by October 1982.

- A high range monitoring instrument has been placed in the Control Room.

- High range dosimeters have been ordered for the Control Room personnel.

- Additional SCBA and replacement tanks have been placed in the Control Room such that units are available for all Control Room personnel.

Letters dated December 10, 1981, and February 5, 1982, regarding Minimum Shift Staffing, SROs and expansion of the Control Room were sent to the Office of Nuclear Reactor Regulation (NRR). At the time of this appraisal, no response to these letters has been received from NRR.

Based on the above findings regarding control room ventilation and size, this is an open item.

4.1.1.2 Technical Support Center (TSC)

A review was made of the Interim Technical Support Center (TSC) to determine its acceptability under accident conditions. The review included discussions with the Radiation Protection Associate, Radiation Protection Specialist and the TSC Scheduling Coordinator.

The results of the review indicated that the Interim TSC is 30 seconds from the Control Room, covers 1875 square feet and can easily accommodate 25 persons. The Interim TSC is not radiologically habitable because of the large number of windows; however, habitability monitoring is in place and operational. The TSC ventilation is normal building ventilation; however, respiratory protection is readily available. This facility is equipped with adequate communications systems (see Section 4.2.3, Communications) including adequate dedicated HPN and ENS lines. Two television monitors make all Control Room parameters (e.g., reactor pressure level, torus level and temperature, drywell pressure) available in the TSC. Meteorological data is also available. Up-to-date records, schematics, plant Technical Specifications, plant Operating Procedures, Emergency Plan and Implementing Procedures, and information showing the current plant status are readily available.

A new building on the east side of the Administration Building is scheduled to be built by fall of 1982. A permanent TSC will be located on the second floor of this building.

Based upon the above findings, the permanent Technical Support Center is an open item.

4.1.1.3 Operations Support Center

A review was made of the Operations Support Center (OSC) to determine its acceptability under accident conditions and to determine if it was located as specified in the emergency plans and procedures.

The review included discussions with the Radiation Protection Associate and Radiation Protection Specialists and an inspection of the Operations Support Center.

The OSC is located on the bottom floor of the Administration Building. The following rooms and areas comprise the OSC: Main Access Control Area, Counting Room, Hot Lab, Decontamination/First Aid Area, Whole Body Counter and Exposure Control Room, Radiation Protection Office, Engineer's Office, and Fire Brigade Room. The ventilation is normal building ventilation; however, respiratory protection and habitability monitoring are available at the Main Access Control Area. An isolated ventilation system with HEPA and charcoal filters is scheduled to be in place in the Counting Room by October 1982. Should the OSC become uninhabitable, the Shift Supervisor's Office on the second floor of the Administration Building

would be the back-up OSC, and the Guard Station would become the alternate Main Access Control Area.

Monitoring equipment, respiratory protection, first aid supplies, air sampling equipment, protective clothing, and decontamination facilities are readily available in the OSC.

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

4.1.1.4 Emergency Operations Facility (EOF)

A review was made of the Emergency Operations Facility (EOF) to determine its acceptability during accident conditions.

The review included discussions with the Radiation Protection Associate Radiation Protection Specialist and review of Section 7.1 of the Emergency Plan and Corporate Implementing Procedure 1.15.

The results of the review indicated that the Interim EOF is located on the second floor in the Security Federal Bank Building which is located in the City of Monticello, 3½ miles from the plant. Adequate communications systems are in place and operable (see Section 4.2.3, Communications). The EOF is not radiologically habitable and the ventilation is normal building ventilation; however, the facility has the capability for habitability monitoring and respiratory protection is available.

Adequate radiological monitoring equipment and protective clothing are available; however, high range personnel dosimeters are needed. Dosimeters are available, but the range is only 0-200 mR. A decontamination kit and sink with running water and first aid supplies are available.

Current copies of the plant Emergency Plan and Implementing Procedures, site and local maps, state and local Emergency Plans, a copy of the plant"s FSAR, plant Technical Specifications, layout drawings, schematics and diagrams are available in the EOF.

The back-up EOF is located 45 miles from the plant at corporate headquarters in Minneapolis.

A new EOF located approximately 1/3 mile from the plant is currently under construction. It is a concrete structure and has a protection factor of 5. It is scheduled for completion in August 1982. This facility will have an isolated ventilation system with perfilters, HEPA and activated coconut shell charcoal filters. A large number of people can be accommodated and decontamination facilities are available.

Based on the above findings, this portion of the licensee's program is an open item pending completion of the permanent EOF.

4.1.1.5 Post-accident Coolant Sampling and Analysis

A review was conducted of the post-accident coolant sampling and analysis facilities to determine agreement with the guidance of NUREG-0737. The inspector toured the sampling facilities with the Senior Chemist and the

Chemistry Radiation Protection Specialists. The interim facility was in place and had the capability of sampling the reactor primary system through the residual heat removal A or B loop. The location of the sampling station was on the 985.5 foot elevation of the reactor building. Dose calculations and projections based on the Regulatory Guide 1.3 source term indicated that the sample could be obtained and analyzed within the 5 rem limit as per GDC 19 of 10 CFR 50, Appendix A.

Area monitor A-8 was located in the cleanup system area access. Shielded liquid sample containers and remote handling tools for use in transporting the sample were available from the chemistry lab. The sample counting facility ventilation system was isolated, and adequate shielding was in place to assure accessibility under accident conditions. Two Canberra Series 80 multi-channel analyzers with GeLi crystals were available in the counting laboratory. Equipment for determination of H_2, O_2, chloride, pH and boron were contained in the chemistry lab. Sampling techniques provided for representative samples. The sample could be obtained within one hour, and the analysis could be performed within two hours.

The permanent post-accident coolant and containment air sampling system was being installed with completion and full operation projected for August 1, 1982. Northern States Power communicated this information to NRR on December 29, 1981. This system, designed by General Electric, will be capable of obtaining representative liquid and gas samples from within the primary containment for chemical and radiological analysis. The control panel and sample station will be located outside the secondary containment on the 951 foot elevation of the Turbine Building near the Control Room access door.

Based on the above findings, the intermediate sampling system is considered to be acceptable. The installation and full operation of the permanent post-accident coolant sampling station is considered an open item.

4.1.1.6 Post-accident Containment Air Sampling and Analysis

A review was conducted of the post-accident containment air sampling and analysis facilities to determine agreement with the guidance of NUREG-0737. The inspector toured the sampling and analysis facilities with the Senior Chemist and the Chemistry Radiation Protection Specialists. The interim facility was in place and had the capability of sampling the containment atmosphere. The location of the sampling station was on the 935 foot elevation of the reactor building. Dose calculations and projections using the Regulatory Guide 1.3 source term and based on access to the sample station through the radwaste building indicated that the sample could be obtained and analyzed within the 5 rem limit as per GDC 19 of CFR 50, Appendix A.

Area monitor A-7 was located at the radwaste access. Shielded sample containers and remote handling tools for use in transporting the sample were available from the chemistry lab. The sample counting facility was described in Section 4.1.1.5 of this report. Sampling techniques provided for representative samples. The sample could be obtained within one hour, and the analysis could be performed within two hours.

During the tour of this facility, the inspector noted that a one-foot length of surgical rubber tubing was used in collecting the sample. In the event of pressurization within containment and subsequent pressurization, expansion and rupture of the surgical tubing could result when it is pierced by a syringe. Adequate strength tygon tubing or septums should be used based on anticipated containment pressure, or pressure reduction valving or limiting orifices should be incorporated into the sampling system.

The permanent sampling system described in Section 4.1.1.5 of this report will correct this problem. In the interim, the surgical rubber tubing was replaced by a length of rigid plastic tubing with fittings, quick disconnects, and a tygon septum.

Based on the above findings, the intermediate sampling system is acceptable. The installation and full operation of the permanent post-accident containment air sampling system is an open item.

4.1.1.7 Post-accident Gas and Particulate Effluent Sampling and Analysis

A review was conducted of the post-accident gas and particulate effluent sampling and analysis facilities to determine agreement with the guidance of NUREG-0737. The inspector toured the sampling and analysis facilities with the Senior Chemist and the Chemistry Radiation Protection Specialists. The stack sampling facility was located on the second level (940 foot elevation) of the plant discharge stack and consisted of two inline scintillation counters and inline filter cartridge assemblies for obtaining gas, particulate and tritium samples. Dose calculations and projections based on the Regulatory Guide 1.3 source term indicated that the samples could be obtained and analyzed without any personnel exposure above 3 rems.

The stack effluent was continuously monitored with readout in the reactor control room. Shielded sample containers and remote handling tools were available from the chemistry lab. The sample counting facility was the same as described in Section 4.1.1.5 of this report. A liquid scintillation counter was available in the chemistry lab for tritium analysis. The reactor building vent stacks could also be sampled for gas and particulate effluents. The sampling station was located on the 1027.75 foot elevation of the reactor building. Isokinetic samples were obtained with probes into the vent stack. The stack was continuously monitored with readout in the control room. Sampling techniques provided for representative samples. The samples could be obtained within one hour and the analysis could be performed within two hours.

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

4.1.1.8 Post-accident Liquid Effluent Sampling and Analysis

A review was conducted of the post-accident liquid effluent sampling and analysis facility to determine agreement with the guidance of NUREG-0737. The inspector toured the plant discharge canal sample facility with the

Chemistry Radiation Protection Specialist. The facility contained a weighted sample bottle with a retrieval line for sampling the discharge canal and instrumentation for determination of total chlorine. The facility was located approximately 1,500 feet from the reactor building near the plant boundary and would be available for sampling under accident conditions.

Additional sampling locations were provided at the cities of Monticello, Elk River, Anoka, and the Minneapolis and St. Paul drinking water intakes. The discharge canal sampling station was monitored with readout in the control room. Shielded sample containers were available from the chemistry lab. The sample counting facility was the same as described in Section 4.1.1.5 of this report. Sampling techniques provided for representative samples. The samples could be obtained within one hour and the analysis could be performed within two hours.

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

4.1.1.9 Offsite Laboratory

The licensee would use a mobile laboratory, from its sister station at the Prairie Island facility, for offsite and/or onsite radioanalysis should it be needed during an radiological emergency. The mobile laboratory would be available in two hours or less. The mobile laboratory would be manned by Prairie Island personnel.

The mobile laboratory has a dedicated 4K multi-channel analyzer, with a high purity germanium crystal. It is maintained, calibrated, routinely checked and promptly repaired as needed. Radiation Protection Specialists provided the NRC inspectors with a walk-through of the laboratory in November of 1981 during the Prairie Island Emergency Preparedness Appraisal.

The Monticello EOF will, during the summer of 1982, contain a fixed back-up laboratory. The necessary components for this laboratory are now being ordered.

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

4.1.2 Protective Facilities

4.1.2.1 Assembly/Reassembly Areas

A review was made of the licensee's assembly/reassembly areas to determine if they are located as specified in the Emergency Plan and Emergency Implementing Procedures and if they are acceptable during accident conditions under the criteria of NUREG-0654.

The review included discussions with the Radiation Protection Associate and a Radiation Protection Specialist; a review of Section 7.14 of the

Emergency Plan and the Emergency Implementing Procedures A.2-302, A.2-301 and A.2-206, along with an inspection of the facilities.

The results of the review indicated that the Warehouse Assembly Point would be used as the primary onsite assembly point if radiological conditions are acceptable. Nonessential evacuated plant personnel and visitors would be screened for radiological contamination and released. Provisions are available for personnel monitoring, first aid and decontamination. Should the Warehouse Assembly Point become radiologically uninhabitable, nonessential evacuated plant personnel and visitors would be moved to the Substation Assembly Point approximately 1,000 feet south of the Warehouse Assembly Point.

If both onsite locations were radiologically uninhabitable, personnel would be evaluated to one of two predesignated offsite assembly points. If, for some unknown reason, the offsite locations were not habitable, arrangements would be made with the State for another assembly area.

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

4.1.2.2 Medical Treatment

A review was made of medical treatment capabilities to determine if they meet the planning standard criteria of NUREG-0654, Section L. The review included discussions with the Radiation Protection Associate, Radiation Protection Specialists, Plant Nurse, and Training Specialist, and a review of Sections 6.6 and 7.5 of the Emergency Plan and Implementing Procedures A.2-402 and A.2-303, and an inspection of medical facilities.

The results of the review indicated that all plant personnel receive Red Cross First Aid Multi-media Training when they first come to work at the plant and are certified in this area. All radiation protection personnel, shift personnel and fire brigade personnel must be recertified every three years. A registered nurse is on duty full time during an outage and on Thursdays between 12 p.m. and 4 p.m. during normal operations. She is also on 24 hour call for emergencies.

First aid supplies are available in the OSC, Guard Station, Assembly/Reassembly Areas, Control Room, Cold Chemistry Lab, Shift Supervisor's Office, Interim and EOF. Stretchers are available at the OSC and first floor of the reactor building. There are no first aid supplies or stretchers on the other four floors of the reactor building. If personnel were injured on any of these four floors, a stretcher would have to be brought from the OSC and the patient would have to be taken to the OSC before first aid could be administered. Depending on the injury, response time could be critical and first aid supplies, a stretcher and shock blanket should be maintained on all floors of the reactor building. Radiological monitoring equipment is available, and the nurse has volunteered to administer aid anywhere in the plant if escorted by radiation protection personnel. Potassium Iodide is available for emergency use in 130 mg doses.

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

- First aid supplies, shock blankets and stretchers should be located on each of the five floors of the reactor building.

4.1.2.3 Decontamination Facilities

A review was made of decontamination facilities to determine their adequacy in meeting the guidance of NUREG-0654, K.1 and K.5. The review included discussions with the Radiation Protection Associate, a Radiation Protection Specialist, and Radiation Protection Instructor; a review of Emergency Plan Implementing Procedures A.2-407 and an inspection of those facilities.

The results of the survey indicate that decontamination facilities are available at the Main Access Control Point, Assembly Areas, Interim EOF and permanent EOF. Showers and sinks used for decontamination at the Main Access Control Point drain into holding tanks in the Radwaste Building, and those at the permanent EOF drain into holding tanks outside the building. Decontamination kits are located in the Assembly Areas and Interim EOF. They also have running water and provisions for radioactive waste.

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

4.1.3 Expanded Support Facilities

A review was made of the licensee's plans to provide facilities for expanded support during emergency situations. Discussions with the Radiation Protection Associate indicated that neither the Expanded Support Facilities nor communications capability are currently identified. However, a tour of the Plant revealed that capabilities exist for these facilities and the Radiation Protection Associate specified that Expanded Support Facilities with appropriate communications would be identified in the next revision of the Emergency Plan.

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

- Expanded Support Facilities should be identified in Revision 2 of the Emergency Plan which is scheduled for completion in April 1982.

- Appropriate communications should be provided for Expanded Support Facilities.

4.1.4 News Center

A review was made of the licensee's News Center. Provisions for accomodating the press in the event of an emergency was discussed with the Radiation Protection Associate and Radiation Protection Specialist. The licensee has established a Media Information Facility (MIF) in the basement of NSP's corporate office in Minneapolis. This is discussed in

Section 7.2 of the Corporate Emergency Plan. In the event of an emergency, the MIF would be the sole interface between the press and the licensee's Communication Department. The licensee has made adequate provisions for space, telephone service, electrical supply, copying, audio-visual equipment, and security in the MIF.

There are no provisions for a News Center in the site Emergency Plan. The interim and permanent EOFs have capabilities for limited press accommodation; however, no provisions for a News Center have been made. The licensee does not acknowledge the need for a nearsite press interface and maintains that the MIF in Minneapolis will satisfy the requirements for dissemination of information to the news media.

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

- The licensee should establish a joint nearsite press briefing area for use in emergency situations by State, local and licensee media personnel.

4.2 Emergency Equipment

4.2.1 Assessment

4.2.1.1 Kits and Survey Instruments

A review was made of emergency kits and survey instruments to determine their adequacy in meeting planning standards H and I of NUREG-0654. The review included discussions with the Radiation Protection Associate, Radiation Protection Specialists, Guards, Shift Supervisors, a Lead Plant Equipment Operator and Reactor Operator, Nurse, TSC Scheduling Coordinator, and Contractor Personnel; review of Sections 7.4, 7.5 and Table 7.8 of the Emergency Plan and an inspection of the kits at the Warehouse Assembly Point, Substation Assembly Point, Control Room, Shift Supervisor's Office, OSC, Monticello-Big Lake Hospital, Monticello-Big Lake Ambulance, Guard House, TSC, and EOF. Inventory checks were made on all kits and the contents were examined.

The results of the review indicated the following:

- The high range monitoring instrument had been removed for repairs from the kit in the Control Room. No replacement instrument was placed in the kit.

- There were no high range dosimeters in the kit in the Control Room, Warehouse Assembly Point, Substation Assembly Point and Interim EOF.

- There were insufficient medical supplies in the Control Room kit.

- Some survey instruments were not operable in the Interim EOF because of spent batteries. One instrument was defective.

- The decontamination kit in the Interim EOF had no soap.

- The first aid kit and burn kit located in the Shift Supervisor's Office are not listed in Table 7-8 of the Emergency Plan. However, they are specified in Section 7.5 of the Emergency Plan.

- In Section 7.5 of the Emergency Plan, first aid and medical supplies are specified as being located in the Cold Chemistry Laboratory. This area is now part of the OSC.

The following actions were taken during the appraisal to correct the above conditions:

- Spent batteries were replaced in those instruments which were inoperable in the interim EOF. The defective instrument was replaced.

- A high range monitoring instrument has been placed in the kit in the Control Room.

- High range dosimeters were ordered.

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

- A shock blanket and splints should be included with the medical supplies in the Control Room.

- Table 7.8 of the Emergency Plan should list the medical kits in the Site Superintendent's Office. (See Appendix B)

- A correction should be made to Section 7.5 of the Emergency Plan to indicate that the Cold Chemistry Lab is now part of the OSC and that the medical supplies that were contained therein are now contained in the OSC. (See Appendix B)

4.2.1.2 Area and Process Radiation Monitors

A review was made of the area and process monitoring program to determine their adequacy in meeting the requirements of NUREG-0737 for area and process radiation monitors under accident conditions. The review included discussions with Shift Supervisors, Lead Plant Equipment Operators, Plant Equipment Operator and Assistant Plant Equipment Operators. Examination of the radiologically accessible instrumentation was also conducted. The use of specific process radiation monitors for emergency situations are discussed in Section 4, Table 4-1, Section 7.3 of the Emergency Plan. They are listed in Tables 7-5 and 7-6 of the Emergency Plan.

It was noted that high range containment monitors have just been installed and not all control room personnel were familiar with their use. Training for use and interpretation of the monitor reading was in process.

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

4.2.1.3 Non-Radiation Process Monitors

A review was made of non-radiation process monitors with readouts in the Control Room to determine their adequacy in meeting the guidance of NUREG-0737. The following components were reviewed: reactor temperature, pressure and core flow; recirculation flow; loop flow; main steam line pressure and flow rates; containment pressure; torus temperature, pressure and liquid level; feedwater and condensate temperatures, pressures and flow rates; condenser liquid levels and pressure; and seismic monitors. The status of these monitors indicated that they were operational and functional. Discussions with Shift Supervisors and Plant Equipment Operators indicated they had a clear understanding of the use of these monitors for emergency detection, classification and assessment. The alarms associated with these monitors are used for the initiation of operator action to respond to a spectrum of emergency situations.

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

4.2.1.4 Meteorological Instruments

The basis for the inspector's review of the licensee's meteorological measurements program included Regulatory Guides 1.23 and 1.97 and the criteria set forth in NUREG-0654, 0696 and 0737.

The licensee provided a brief description of the meteorological measurements program in Section 7.3 of the Monticello Radiological Emergency Plan. The integration of meteorological data into the licensee's dose assessment scheme was found in Procedure A.2-406. The inspectors reviewed the licensee's procedures for surveillance and calibration of the system, Procedure 2170 and Calibration 7320.

The inspectors determined that the licensee's meteorological capabilities address the requirements of NUREG-0737, Item III.A.2 and the criteria set forth in NUREG-0654, Appendix 2, in adopting the interim compensating measures to milestone three.

The meteorological measurements system has the capability to provide the basic parameters (i.e., wind direction and speed, and an estimate of atmospheric stability) necessary to perform the dose assessment function. Fifteen-minute averaged meteorological conditions are recorded in the interim TSC adjacent to the control room; data from the primary system are not available in the control room. However, the licensee moved the meteorological measurements system into the Site Superintendent's office.

While this office is not yet designated as part of the control room, a licensing request has been made to include the office as part of the control room. Therefore, this is an open item.

The primary meteorological measurements system affords two temperature gradients over 30 and 90 meter layers. The stability class gradations provided in Regulatory Guide 1.23 are generally applicable for a 50 meter layer. The smaller height differential (30m) tends to enhance the frequency of extremes due to specification limits of the instruments and scaling. As a result, the narrow range stability categories (e.g., Pasquill Class B or C) may not be determinable from the available equipment. The larger height differential (90m) tends to enhance the frequency of near neutral conditions. Should a disparity exist between the two estimates of atmospheric stability, the meteorological program should include a means to determine applicability.

Less refinement in stability categorization (e.g., four classes rather than seven) would provide reasonable assurance that the dilution characteristics would be adequately described, and would simplify the manual method for dose projection.

All meteorological instrumentation was operating. Provisions had been made for access to an alternate data source in the event the primary system was out of service. The National Weather Service (NWS) at Minneapolis was identified as one of the back-up sources of data. Use of the information obtainable from the meteorological equipment on the top of the reactor building should be restricted due to the building obstruction effects and the limited equipment maintenance program.

Information regarding severe weather conditions is forwarded to the control room staff by the load dispatcher; telephone lines and radio can provide direct access to the state and local agencies for transmitting or receiving meteorological information updates. The licensee has access to the NRC health physics network to provide the NRC with direct telephone access to the individual responsible for making offsite dose projections.

The licensee's preventative maintenance activities consist of a multi-tiered program of surveillance and calibrations. This program is adequate to provide reasonable assurance that meteorological data will be available for use by emergency response personnel with a high degree of reliability.

The primary meteorological measurements program is situated on relatively flat terrain, sufficiently distant from the plant to assure no influence from buildings and other structures. In the immediate vicinity of the tower, observed foliage growth (trees) was high enough to have a "windbreak" effect on the tower level wind measurements. However, these trees were removed before the inspectors left the site.

Based on the above findings, this portion of the licensee's program is acceptable. Control Room improvements are an open item.

4.2.2 Protective Equipment

4.2.2.1 Respiratory Protection

Respiratory equipment was observed and inspected at key points on and off-site by the inspectors. These include two styles of full-face respirators,

Self-Contained Breathing Apparatus (SCBA) equipment, spare oxygen bottles, and large cylinders for refilling the smaller 30-minute limit bottles. Most face masks are stored in racks in a storeroom as part of the OSC. These respirators are sealed in plastic bags and identified by individual seal numbers inside the plastic bag.

Warehouse No. 2 contains large air cylinders used to refill the small oxygen bottles. A five-cylinder cascade system is set up for refilling the small bottles. Air pressure of 2,216 psig is maintained in the large storage cylinders. SCBA units are available here as well as in a separate Butler-type building and the Substation Assembly Point Warehouse. The present interim EOF on the second floor of a bank building contains 25 MSA-type respirators. The inspector noted that the Control Room had only two SCBA units available; however, the Radiological Emergency Coordinator transferred six SCBA units from warehouse No. 2 to the Control Room. The TSC had no SCBA units in its area; however, these units are readily available from the OSC two floors below. Additional respiratory protection equipment for these facilities is also available from the Prairie Island Nuclear Station.

Testing of respirators done on an annual basis and decontamination of the mask is made each time after use. Particulate filters are discarded and replaced after each use. The SCBA units are functionally tested quarterly. Surveillance records were reviewed by the inspector for both types of respiratory protection and were considered satisfactory.

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

4.2.2.2 Protective Clothing

The inspectors examined the location and quantity of protective clothing available onsite and at the interim EOF. Supplies for emergency workers were stocked in cabinets in each of the emergency facilities plus the warehouse and normal stock rooms serving those working in suspect radiation contamination areas. Quantities and types of clothing available were adequate. Supplemental supplies of protective clothing could be provided by the sister plant, Prairie Island Nuclear Station.

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

4.2.3 Emergency Communications

Emergency communication equipment and its applicability as a vital part of the emergency response facilities of the plant were reviewed by the inspector. The Control Room has an AC-powered radio receiver/transmitter which has five separate channels. These channels are used to communicate with NSP System Dispatchers, the Monticello City Hall and the Wright County Sheriff. A radio-telephone link exists between the State Division of Emergency Services and the Control Room, TSC and EOF. Five telephones in the Control Room are used to communicate with the TSC directly. Also, a transmitter in the TSC is used to notify key licensee personnel plus those

in local support agencies who have a tone-alert radio receiver in their homes or place of business. The Plant PA System may be initiated from the Control Room for in-plant communication. An NRC-ENS telephone is installed in the Control Room.

The TSC contains the main communications with the EOF through a dedicated automatic ringing telephone. An HPN and ENS telephone are both installed in the TSC and each is operational. Another emergency phone line in the TSC connects with the licensee's corporate office in Minneapolis.

The OSC contains an intercom with the TSC, an HPN phone to contact NRC offices, normal in plant phone connections, plus a radio console to conact plant portable radios. The interim EOF contains an HPN phone plus an ENS phone to contact NRC offices. A two-way radio is available for contacting the TSC, Wright County Sheriff and the City of Monticello.

Key telephones in the EOF have head sets attached. One telephone is a dedicated automatic ringing type connected to the licensee's corporate office. Two telephones have three-way connections between the EOF, TSC and the State Capitol. Field monitoring teams are contacted from the EOF by means of two-way portable radios. These were tested by the inspection team and functioned satisfactorily.

The Headquarters Emergency Center has several dedicated telephones for emergency use plus access to the System Dispatcher. This was inspected during the Prairie Island Appraisal.

The Shift Emergency Communicator tests the communication equipment monthly. Current test results were reviewed by the inspector.

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

4.2.4 Damage Control/Corrective Action and Maintenance Equipment and Supplies

Needs for onsite damage control include: hydraulic jacks, lifting equipment, welding equipment, piping, valves, temporary shielding, and decontamination supplies. The inspector determined that these needs could be met from onsite supplies. Upon activation of the OSC, those maintenance supervisors called would take the parts catalog and a Piping and Instrument Diagram Book to the OSC for reference if needed. The Northern States Power Company fossil fuel plant nearby can supply additional tools and certain equipment if needed. The spare parts inventory will be computerized within a year.

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

4.2.5 Reserve Emergency Supplies and Equipment

Survey instruments, protective clothing, dosimetry and other radiological equipment are ordered separately from other plant equipment and supplies

by a Radiation Protection Specialist assigned to Emergency Preparedness. A computer printout is generated with reorder points specified when minimum levels are reached. Minimum stock levels on other categories of equipment are kept in the plant warehouse. As reported in Section 4.2.4, the licensee's nearby fossil plant is used for certain spare tools and general equipment. Also, radiological equipment and certain piping and tools can be supplied in an emergency from the Prairie Island Nuclear Plant about two hours' driving time away.

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

4.2.6 Transportation

There are no dedicated vehicles set aside to support an emergency response. Four of five pickup trucks are available for all job-related usage. One of these is a four wheel drive vehicle. Keys are available through the appropriate authorities. Communications, while in the vehicle, are maintained by two-way radio.

For prior drills and exercises, the licensee has rented station wagons from St. Cloud, Minnesota, approximately 30 miles away. Procedure A.2-410, Out of Plant Surveys, states that if an NSP vehicle is unavailable, "use any available privately-owned vehicle." An all enclosed station wagon or van-type vehicle with four wheel drive is not dedicated for offsite monitoring teams and other emergency functions.

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

- The licensee should provide at least one enclosed vehicle with four wheel drive dedicated for emergency response functions.

5.0 EMERGENCY IMPLEMENTING PROCEDURES

5.1 General Content and Format

The Emergency Plan Implementing Procedures (EPIP's) generally have a uniform format covering; purpose, conditions or precautions, responsibilities, discussion, procedure, and checklists. EAL's and PAG's are clearly identified along with the emergency actions to be implemented. The procedural steps are written sequentially. The prerequisites and conditions, and precautions and limitations for procedural performance are identified.

Where necessary, the EPIP's leave room for EAL interpretation and rapid implementation of PAG's. The procedures refer the users to the Emergency Plan, other EPIP's and/or normal operating and health physics procedures and NUREG-0654. Apecific references appear in the body of the report where needed, and under a separate heading if they serve as a basis/authority for the EPIP. References made in the EPIP's are available to the user. The

EPIP's employ checklists that document completion of procedural steps and are maintained as Emergency Records should they be used.

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

5.2 Emergency Alarm and Abnormal Occurrence Procedures

The annunciator procedures and abnormal procedures contain insertions flagged by the word "NOTE" that refer the user to the EPIP's. In addition, the annunciator procedures refer the user, where necessary, to the abnormal procedures for mitigating actions. The abnormal procedures also refer the user to EPIP's, where necessary.

Walk-throughs with the Site Superintendents normally began by naming specific annunciator alarms as a trigger point for initiating accident scenarios. In each case presented, the proper identification of both abnormal procedures and EPIP's were made to properly classify the emergency and implement additional mitigating or protective actions.

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

5.3 Implementing Instructions

The EPIP's contain implementing instructions for the Emergency Director for each class of emergency:

1.	Unusual Event	A.2-102
2.	Alert	A.2-103
3.	Site Area Emergency	A.2-104
4.	General Emergency	A.2-105

EPIP A.2-101 defines the Emergency Classes and provides 30 implementing guideline conditions for each class (see Section 5.4.2). The conditions (e.g., fuel cladding degradation, mainsteam line break and loss of AC power) define the offnormal event and the EAL's provide the ways to recognize the condition. The guidelines also assist the Emergency Director (ED) in classifying the event and then direct him to one of the four emergency class EPIP's for further actions.

The emergency measures to be taken by the emergency staff are specified in the EPIP's which are sequentially displayed. The emergency organization is specified in EPIP A.2-001, and responsibilities are defined in each EPIP.

The EAL's are specified in the EPIP's.

The EPIP's that are designed for the Emergency Director also reference other EPIP's for use in implementation of the Emergency Plan.

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

5.4 Implementing Procedures

5.4.1 Notifications

A review was made of the notification procedures to determine agreement with NUREG-0654 guidance. A description of the notification scheme was contained in Section 6.2.1 of the Emergency Plan. The sequence or notifications to alert, mobilize or augment the onsite emergency organization and supporting agencies was specified in Emergency Plan Implementing Procedures (EPIP) A.2-102 through A.2-105. The immediate notifications that are the responsibility of the Emergency Coordinator were contained in the implementing procedures. The procedures described the notification methods. Action levels for notification were specified in the EPIP's.

The Monticello Communication Coordinator's duties were specified in the Corporate EPIP 1.1.5, Startup and Operation. Action levels were specified after the EOF had been activated as stated in EPIP 1.1.5. TAB D of this procedure listed the licensee's Headquarter's phone numbers, State EOC numbers and local EOC numbers to contact and in which order. How to obtain contractors, vendors or private agency support was stipulated in Corporate EPIP 1.1.14, Revision 2.

Notification to the onsite emergency organization, corporate office and to the NRC was contingent on Section 4.0, Emergency Classification System, and Section 6.0, Emergency Measures. At the Unusual Event level NRC (Region III plus Headquarters) and State and/or local authorities are to be informed. At all other escalated emergency levels, these same notifications were repeated.

Local offsite authorities were responsible for notification to the general public including transients. The licensee's emergency call lists stated that the NRC will be notified within 15 minutes for an Unusual Event and the State, county and local agencies within 15 minutes for escalated emergencies above an Unusual Event. This complied with the planning standards of NUREG-0654 and 10 CFR 50.72.

The initial notification procedure included general terminology complemented by specific classification and brief information and data as illustrated in Attachment 2 of the plant's EPIP A.2-103. This same notification procedure, Attachment 4, listed the agencies and order of contact. Telephone numbers were listed. Authentication of contacts with offsite authorities was done by the agencies calling back the plant to verify the authenticity of the initial phone call.

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

5.4.2 Assessment Actions

The licensee uses EPIP A.2-201, Classification of Emergencies, as an initial assessment action mechanism. This EPIP contains 30 initiating conditions (EAL's) identified for each emergency class. The information obtained from this procedure leads the Emergency Director to the applicable procedure for each emergency class. EPIP's A.2-102, 103, 104 and 105

prescribe the actions to be taken for Unusual Events, Alerts, Site Area Emergencies and General Emergencies, respectively.

The four emergency class EPIP's, which specify preplanned response actions and other EPIP's that prescribe supplementary actions, would initially be used by the Emergency Director (ED) in the reactor control room. The Shift Emergency Communicator (SEC) and the shift Technical Advisor (STA) would be, as demonstrated in walk-throughs, available to the ED in three to five minutes, depending upon the time of day. The SEC would initiate notifications, as requested by the ED, and the STA would provide technical reactor analysis to assist the ED.

Several supporting EPIP's are used to specify decision-making and implement responsibilities, conditions and prerequisites, precautions. background information (where needed), and step-by-step instructions for protective actions. Additionally, checklists, attached to the procedures, provide sequential actions for the ED's use. These checklists, containing initials, date and time, are retained for emergency records.

EPIP A.2-208 provides assessment guidance for more damage establishing source term radionuclides. This procedure uses the General Electric Company's guidance for plants with this type of post-accident sampling system (see Sections 5.4.2.4 through 5.4.2.11). In addition to use of post-accident sampling procedures, the high range containment radiation monitor can be used for source term derivation. EPIP A.2-207 establishes the sampling priorities for identification of source terms and release points. EPIP A.2-405 specifies criteria for determining environmental release rates for various radionuclides. The procedure methods for estimating releases from monitored pathways, post-accident samples and direct portable instrument readings.

A.2-406, Offsite Dose Projections, includes computerized and hand calculation methods. Both systems employ the Monticello offsite Dose Computation (MODCOM) Program. MODCOM uses finite and semi-infinite plume models for 100 meter elevated stack releases, and a semi-infinite plume model for the plant vent. The finite plume model, used to calculate noble gas dose rates, is based upon "Assessment of Gamma-ray Exposures Due to Finite Plumes (Health Physics Journal 41, page 319, 1981, Lahti, G.P. et.al). The semi-infinite model is based upon Regulatory Guides 1.145 and 1.109 meteorological and dose parameters.

Forty radionuclides are employed in the MODCOM system, and noble gas decay is applied both to the source term and transportation time.

The MODCOM dose rate values are converted to dose estimates and stored in system data files. System options allow printout of the two models for stack (elevated) releases and one model for vent (ground) releases. Dose and dose rate projections include whole body and thyroid exposures at the site boundary, nearest receptor, and out to ten miles by increments of one mile for any sector. Plume arrival times are also calculated.

Real time or calculated meteorological parameters can be used, and these values are also printed. The program also provides estimated plume width

in meters and calculates X/Q values at each reported distance. All results can be obtained at 15, 30 or 60 minute intervals.

Walk-throughs were made on each shift with the Site Superintendent, using scenarios that led to significant offsite doses. The Site Superintendents, acting as the ED, properly classified the emergency classes and made the necessary notifications as the scenarios escalated to offsite releases of radionuclides. During these walk-throughs the ED's called an untrained shift radiation technician for dose assessment. It was learned that some Rad/Chem Technicians have not been trained relevant to dose assessment. These Rad/Chem Technicians were trained prior to departure of the NRC Appraisal Team.

Printouts of dose assessment were then given to the Site Superintendents during these walk-throughs, and it was learned that they were not familiar with the format.

When asked to form protective action recommendations, the ED's were initially uncertain. Part of the uncertainty was the result of the length of the printout, and part was due to the absence of a time estimate to terminate the release.

Following the walk-through, the licensee modified the computer software by adding realistic default value for termination of release. Based upon the length of releases until the PAG's are reached, the program will now provide a recommendation for protective actions out to specified distances. Followup discussions with the ED's demonstrated that they both understood the modified computer printout and knew who to call to obtain the printout.

EPIP A.2-204 specifies the offsite protective action recommendations to be used by the ED in accord with Form 5790-104-4 requirements for immediate notification as per EPIP A.2-105. The offsite protective action considerations are based upon EPA guidelines. At exposures less than EPA guidelines, no planned protective actions would be recommended, but an advisory would be issued to seek shelter and await further instructions. At projected doses of 1 to <5 rem whole body and 5 to <25 rem thyroid, sheltering would be the minimum recommendation and evacuation the maximum. Projections of 5 rems or more whole body and/or 25 rems or more thyroid would mean recommending mandatory evacuation. Generally, the recommendation for the area to be evacuated would resemble a keyhole consisting of a full radial evacuation (360°) and a 90° (or larger). The length of the downwind sectors would be based upon dose projections.

At the onset of a radioactive release from the plant, one or more environmental surveillance teams could be dispatched for plume verification and direction (see Section 5.4.2.1). The Radiological and Environmental Monitoring Program would, as necessary, be implemented within two hours following declaration of the event (see Section 5.4.2.12).

Based upon the above findings, this portion of the licensee's program is acceptable. (See Section 3.2. for training recommendations.)

5.4.2.1 Offsite Radiological Surveys

Three Emergency Plan Implementing Procedures (EPIP's) are used by the licensee for offsite surveys. These EPIP's are A.2-202, A.2-410 and 1.1.10 (corporate). EPIP A.2-202 covers the conditions, prerequisites, precautions, responsibilities and general methods to be employed for offsite surveys, including records and record disposition. A.2-410 covers the detailed methods to staff, equip and monitor for radiological conditions. Environmental factors that could adversely affect radiation measurement and detection instruments are specified and guidance to avoid such effects are covered. In-field techniques for analyses are also provided along with survey team equipment lists and sample logs that would be used for records. EPIP 1.1.12, the corporate procedure, describes the back-up corporate offsite monitoring role (see Section 5.4.2.12).

The Monticello offsite monitoring capability includes dispatching of at least one team during the first thirty minutes. Between thirty and sixty minutes, following the onset of offsite releases several additional teams (two to five) could be deployed. However, unless radiological releases to the environment began concurrent with declaration of an emergency Alert, two to five offsite survey teams could be dispatched at the onset of such an event. Each team would consist of two surveillance persons, one of whom would be a radiation technician. In addition a driver for the team vehicle would be used.

While the initial direction for the offsite monitoring team comes from the Emergency Director in the reactor control room, the Radiological Emergency Coordinator (REC) would, within 15 to 30 minutes provide technical direction and coordination of this function. In less than two hours, following notification of Prairie Island, the offsite monitoring function would be implemented by their plant monitoring teams. Further, the need for collection of TLD's, air samples and environmental samples would begin, if necessary by corporate personnel and/or state monitoring teams. This routine environmental program, which would also be used during the course of an emergency, employs preestablished locations.

The inspectors reviewed the offsite monitoring procedures and equipment and conducted walk-throughs with several radiation technicians to determine the program adequacy. The walk-throughs revealed that, due to recent (February 24, 1982) revisions of the procedures, that three off-shift technicians had not yet received full training on the revised procedures (see Section 3.2 for further discussion).

Based upon 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

In-plant and out-of plant surveys are covered in EPIP A.2-403 and A.2-410. Personnel and vehicle monitoring and decontamination is covered in

EPIP A.2-403. Reentry team monitoring is covered in EPIP A.2-601. Habitability surveys for the TSC, OSC, EOF and the assembly areas are covered in EPIP's as described in other sections of this report.

The inspector reviewed the procedures and conducted walk-throughs with the radiation technicians to determine the adequacy of the onsite emergency monitoring program. The procedures provided the surveillance techniques, precautions, prerequisites and records required for the program. The walk-throughs demonstrated that the technicians knew and understood how to apply the procedures during emergency situations, and that the necessary equipment was available for use.

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

5.4.2.4 Primary Coolant Sampling

5.4.2.5 Primary Coolant Sample Analysis

A review was made of the interim primary coolant sampling and analysis procedures. Procedure A.2-404, Emergency Sampling and Analysis, Attachment 1, covered reactor coolant sampling and analysis. The procedure contained precautions to be taken in obtaining the sample, required equipment and a detailed step-by-step procedure for obtaining, transporting and analyzing the sample. Provisions for limiting exposure of sampling personnel were contained in the procedure. Habitability analysis of the sample area was performed. The sample point location was clearly described. Data sheets for each sample and directions for labeling samples were contained in the procedure. The sample could be obtained in one hour.

Directions for dilution of samples greater than 10 mR/hr were contained in the procedure. Lead bricks in the hot lab hood and lead aprons were provided for protection of personnel. Provisions were made to place all samples in plastic bags to protect counting facilities from contamination. In the event the counting lab could not be used due to high backgrounds, provisions were made to use the mobile counting lab from Prairie Island Nuclear Plant. Provisions were made to provide sample results to the radiological emergency coordinator and submit checklists to the emergency record keeper.

MCA's were operationally checked daily for energy drift and calibrated monthly using a seven point gamma calibration standard. The GAMMA K computer program keyed results to the emergency action levels. Sample analysis could be completed in two hours.

Based on the above findings, the licensee's procedure for the interim sampling and analysis is acceptable. Procedures for the permanent primary coolant sampling system have not been completed. This is an open item.

5.4.2.6 Containment Air Sampling

5.4.2.7 Containment Air Sample Analysis

A review was made of the interim containment air sampling and analysis procedures. Procedure A.2-404, Attachment 4, covered containment air sampling and analysis. The procedure contained precautions to be taken in obtaining the sample, required equipment, protective clothing to be worn and a detailed step-by-step procedure for obtaining, transporting and analyzing the sample. Provisions for limiting exposure of sample personnel were contained in the procedure. Habitability analysis of the sample area was performed. The sample point location was clearly described. Data sheets for each sample and directions to label all samples were contained in the procedure. The sample could be obtained in one hour.

Directions for dilution of samples greater than 10 mR/hr were contained in the procedure. Lead bricks in the hot lab hood and lead aprons were provided for protection of personnel. Contamination control procedures were in effect in the counting lab. If the counting lab could not be used due to high backgrounds, the mobile counting lab from Prairie Island would be used. Provisions were made to provide sample results to the radiological emergency coordinator and to the emergency record keeper. Operation and calibration checks were described in Sections 5.4.2.4 and 5.4.2.5 of this report. Sample analysis could be completed in two hours.

During the appraisal, Procedure A.2-404, Attachment 4 was revised by the licensee to reflect the replacement of the surgical rubber tubing with rigid plastic tubing with quick disconnects and a tygon septum.

Based on the above findings, the licensee's procedure for the interim sampling and analysis system is acceptable. Procedures for the permanent containment air sampling system have not been completed. This is an open item.

5.4.2.8 Stack Effluent Sampling

5.4.2.9 Stack Effluent Sample Analysis

A review was made of the stack effluent sampling and analysis procedures. Procedure A.2-404, Attachment 2, covered reactor building vents, charcoal and particulate sampling and analysis. Attachment 3 covered main exhaust stack charcoal and particulate sampling and analysis. The procedures contained precautions to be taken in obtaining the samples, required equipment, protective clothing and detailed step-by-step procedures for obtaining, transporting, and analyzing the samples. Provisions for limiting personnel exposure were contained in the procedures. Habitability analysis of the sample area was performed. The sample point locations were clearly described. Data sheets for each sample and directions to label all samples were contained in the procedures. Both samples could be obtained in one hour.

The procedures contained directions for analyzing or diluting high level samples. Counting lab facilities were the same as described in Sections 5.4.2.4 and 5.4.2.5 of this report. Additional procedures

described the use of the SAVCAL and PART computer programs for determination of Iodine and Particulate release rates. Sample analysis could be completed in two hours.

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

5.4.2.10 Liquid Effluent Sampling

5.4.2.11 Liquid Effluent Sample Analysis

A review was made of the liquid release sampling and analysis procedure. Procedure A.2-404, Attachment 7, covered liquid release sampling and analysis. The procedure contained a list of required equipment and detailed step-by-step procedures for obtaining and analyzing the samples. The sample point locations were clearly described. Data sheets for each sample and directions to label all samples were contained in the procedure. Samples of the discharge canal and the river water located in the cities of Monticello, Anoka, and Elk River could be obtained within one hour.

The procedure contained directions for initial determination of radioactive liquid samples. Counting lab facilities were the same as described in Sections 5.4.2.4 and 5.4.2.5 of this report. Sample analysis could be completed in two hours.

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

5.4.2.12 Radiological Environmental Monitoring Program (REMP)

The REMP program is defined in the licensee's corporate EPIP 1.1.12. Initiation of this program would be triggered by an emergency condition requiring offsite response at the Monticello plant. The Emergency Manager would notify the Administrator - REMP of his alternate(s) that special environmental sampling is needed. The two Radiation Protection Specialists (RPS's) who normally work on the routine REMP program would then be deployed to the areas around the reactor where the pre-established REMP stations are located. A full spectrum of air, land, water, milk, vegetation, and TLD samples can be collected and analyzed as necessary.

The two qualified RPS's would take parallel actions with the state and/or federal environmental teams as required, or in the absence of other teams, would conduct the necessary surveillance. They would contact the offsite REMP laboratory (Hazelton Environmental Services) to obtain replacement TLD's, and alert the laboratory regarding special samples to be expected.

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

5.4.3 Protective Action

5.4.3.1 Radiation Protection During Emergencies

The licen. has Emergency Plan Implementing Procedures (EPIP's) that promulgate onsite protection for radiological emergencies. These EPIP's specify decision making and implementing responsibilities, conditions and prerequisites, precautions, background information (where needed) and step-by-step instructions for protective actions. Additionally, checklists are attached to each procedure. The checklists employ a terse listing of sequential actions to be completed, the initials of the person doing the work, and the time and date that the action was completed. The checklists have a note specifying a requirement to retain the checklist for the emergency records.

EPIP A.2-401 addresses personnel exposure limits, control and precautions under emergency conditions. The Emergency Director and the Radiological Emergency Coordinator are the only personnel authorized to permit emergency limit exposures. EPIP A.2-402 covers contamination control guidelines for personnel and equipment and include contamination record forms. EPIP A.2-407 covers decontamination of personnel and vehicles. EPIP A.2-409 covers the use of self-contained breathing apparatus (SCBA) during emergencies and SCBA bottle-filling procedures. Record keeping during an emergency is covered in EPIP A.2-502.

Re-entry control into high dose rate areas, during emergencies is addressed in EPIP A.2-601. EPIP A.2-411 describes the establishment of a secondary access control point become a high radiation area. EPIP A.2-503 describes the necessary emergency reports and documentation to be generated once an emergency has been declared.

Habitability criteria for the control room, TSC, OSC, EOF, and designated assembly points are defined in EPIP's as described in other sections of this report. The various EPIP checklists cover personnel exposure records protective apparel (including respirators), changing radiological conditions and ALARA instructions. EPIP A.2-304 provides guidance on the use of potassium iodide.

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

5.4.3.2 Evacuation of Owner Controlled Areas

The inspector reviewed the licensee's procedures for evacuation of owner controlled areas. EPIP A.2-301 provides instructions for conducting local, plant and site evacuations during radiological emergencies; routing of evacuees; and use of the evacuation siren and public address system. The personnel accountability procedure is referenced and criteria for reentry defined.

The inspector visited the onsite and offsite assembly areas. A licensee representative stated that additional alternative assembly areas could be provided should it be necessary.

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

5.4.3.3 Personnel Accountability

Personnel accountability is covered in EPIP A.2-205. The procedure requires completion of site accountability within 30 minutes. Primary and back-up methods for accountability are specified. The primary method is use of the CAS computer. The computer is programmed for an accounting mode. The back-up method uses the most current listing of personnel onsite, and would be used should the CAS system become non-functional. The back-up method would consist of a role call at the various onsite emergency centers.

Each assembly area has a designated coordinator. The coordinators coordinate the accountability process, and initiate a step-by-step proredure to locate any missing person. Should a person be missing, the Emergency Director would be advised to implement the Search and Rescue Activities Procedure A.2-303. Check lists are provided for onsite evacuation situations as well as for the primary and back-up accountability procedures.

The evacuation lists, along with the owner-controlled area log and visitors' log, would be relayed from all locations to the TSC. During the accountability checks, additional personnel are not allowed to enter the reactor site. Following accountability, individuals may be admitted with the permission of the Emergency Director.

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

5.4.3.4 Personnel Monitoring and Decontamination

The inspectors reviewed the licensee's procedures for monitoring and decontamination during an emergency. During routine operations, all personnel leaving radiological controlled areas are monitored at the access control point. During an emergency, the same monitoring procedures would be used unless the access control point had to be changed (see Section 5.4.3.1). In the event of a site evacuation, EPIP A.2-407 would be used for personnel and vehicle monitoring.

Release limits for contaminated personnel are provided in EPIP A.2-402. Record forms are provided as an integral portion of this EPIP. Disposition of monitoring data is also provided in the EPIP.

EPIP A.2-402 also refers the user to follow normal decontamination plant procedures. Walk-throughs with radiation technicians demonstrated that necessary supplies were available, and technicians had adequate decontamination knowledge. Other walk-throughs, with offsite monitoring radiation technicians, showed that adequate dedicated decontamination supplies were available for decontamination of evacuated personnel.

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

5.4.3.5 Onsite First Aid and Rescue

A review was made of onsite first aid/rescue procedures to ensure that they meet the requirements of Appendix E, Item IV.E.4 of 10 CFR Part 50 and the guidance in NUREG-0654, K.1, L.1 and L.2. The review included discussions with the Radiation Protection Associate, Radiation Protection Specialist and the Plant Nurse and a review of Implementing Procedures A.2-303 and A.2-401.

The results of the review indicated that the methods for receiving, recovering, transporting and handling injured personnel, who may be contaminated, are adequate. The description of the interface and criteria for using the offsite medical treatment facility is adequate. Radiation protection guidance is provided for those individuals designated for search and rescue operations.

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

5.4.4 Security During Emergencies

Security measures to be put into effect during an emergency including evacuation procedures which are specified in station security procedures, SGP No. 3, Section 4.2. Guards are instructed not to impede emergency vehicles entering or leaving the site. On entry into the site, a guard will board the vehicle and escort the driver to the specific location. Security of the vehicle will be maintained while the attendants are inside the plant. Other security during an emergency includes normal patrols and traffic control. The security operators will continue to function. Accountability will be maintained and printout lists of personnel will be obtained when requested by an authorized emergency official.

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

5.4.5 Repair and Corrective Actions

EPIP A.2-603 covers repair and corrective actions. The responsibilities for initiation and direction of the emergency repair team are specified, and individuals who could be used on the team are identified by name, title and home phone numbers. The Radiation Protection Group is responsible for providing radiological information, emergency exposure control and leading the Emergency Repair Team into the affected area. If exposure limit extensions are required, EPIP A.2-603 refers the user to EPIP A.2-401, Emergency Exposure Control.

Alternate onsite and offsite locations for conducting repairs to removed equipment is specified in EPIP A.2-603.

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

5.4.6 Recovery

Section 9.0 of the Emergency Plan divides recovery from emergencies into two types; short and long term. Short term recovery does not include events having core damage or significant releases of radionuclides. The plant organization would be responsible for short term recovery and the Recovery Organization for long term events.

Criteria for transition from the emergency to the recovery phase are identified in the Emergency Plan. The criteria include: (1) assurance that the problem is solved and will not recur: (2) general occupancy areas are free of significant contamination; (3) radiation areas and high radiation areas are defined, and (4) airborne radioactivity is eliminated or controlled.

Written procedures for recovery will be developed, and will be approved by the Operation's committee prior to use. Short term recovery is covered in EPIP 1.1.15 (Corporate).

The long term recovery organization is shown in Section 9.0 of the Emergency Plan, and the major responsibilities are defined in EPIP 1.1.15. EPIP 1.1.15 requires that Power Production Management make the decisions when an emergency should be de-escalated, terminated, and recovery initiated.

As part of the emergency organization, turnover to the recovery organization are the responsibilities of the Administration and Logistics Superintendent, the Logistics Coordinator, and the Communications Coordinator. However, the EPIP's do not specify that either the emergency or recovery organizations will assure that the various individuals and agencies will be informed prior to initiation of recovery actions. Further, changes that may occur in the organizational structure for recovery are not prescribed for such notifications.

A draft of the NSP Corporate Emergency Response Plan was reviewed by the inspector. This draft contained information on recovery. This document, when finalized, will become part of the licensee's emergency preparedness submission to the NRC.

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

- The EPIP's should clearly state that the emergency organization will promptly notify all appropriate individuals and agencies that the emergency has been terminated, recovery actions will be initiated, and define any planned changes in the organizational structure.

5.4.7 Public Information

Procedures which concern public information are described in the Corporate Emergency Plan, Section 7.0. This procedure identifies the licensee's Communications Department as the organization responsible for this function. Training programs are conducted at least yearly to acquaint

the news media with the emergency plans and provide information about radiation and contacts for release of public information in an emergency. The Corporate EPIP 1.1.8 delineates the licensee's provisions for dissemination of information to the news media during an emergency. This procedure designates two media representatives as the primary contacts for the news media. It defines the organizational structure of the communications group during an emergency, and specifies lines of communication and authority. Checklists for key personnel, telephone lists and pre-written sample news releases are also provided in this procedure.

The licensee's corporate News Center in Minneapolis is designated as the only authorized interface between the news media and the licensee.

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

5.4.8 Fire Protection

A review was conducted of the fire protection facilities and procedures. Procedure A.3, Fire Fighting Procedures, was reviewed by the inspector, and an inspection of the fire brigade assembly room was conducted with the Production Engineer. Discussions concerning drills, exercises, training, and requalifications of fire brigade members and offsite fire fighting assistance were conducted with the Plant Superintendent for Operations and Maintenance. Procedure B.8.5 described the fire protection system, controls, instrumentation, detection equipment, and fire extinguishing equipment.

Procedure A.3 contained the onsite fire organization, responsibilities, operation of installed and portable equipment, general and specific fire fighting procedures, emergency team and fire brigade membership, fire classifications and building plans. Specific fire fighting strategies were specified based on location within the plant.

Periodic operability checks and tests were performed by the maintenance department. Frequency of checks and tests was dependent on applicable procedures. The inspector reviewed the fire protection system verification tests. The inspector judged those procedures which were reviewed to be acceptable.

Fire brigade training and requalification was conducted annually. Quarterly drills were conducted onsite. Radiation protection qualification and onsite orientation for offsite fire protection support personnel was conducted annually. Mask fit training for fire brigade personnel was conducted annually. Spare air bottles and the capability to refill air bottles existed onsite.

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

5.5 Supplementary Procedures

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

The inspectors reviewed the licensee's procedures for inventorying, calibrating and making operational checks of emergency equipment and facilities. These are part of the plant's surveillance procedures. Inventories of emergency equipment and calibration of radiation detection instruments are being done monthly. This frequency is being changed to quarterly because of time and labor constraints.

Calibration of a high range Teletector using an Eberline Model 1000B Gamma Multi-source Calibrator was observed by the inspector. Radiation calibration sources are traceable to the National Bureau of Standards sources. The emergency cabinet and the foot locker and the duffel bag adjacent to the cabinet are all secured with a monogram lead seal and wire to detect theft. Also, if the seals are not broken this emergency equipment would not be inventoried. The seals are controlled by the Radiation Protection Group.

The inspectors observed the contents of an emergency cabinet in the Warehouse No. 2 Assembly Point. There was no inventory list provided inside the cabinet. However, Procedure No. 1102 has several inventory itemized lists which include the cabinet's contents. This list is used when an inventory is taken. The inspectors considered this acceptable.

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

5.5.2 Drills and Exercises

The inspector reviewed drills and exercise portion of the licensee's program. The review included discussions with the Radiation Protection Associate, review of the Corporate Emergency Plan Section 10, Administrative Control Directive 3 ACD 8.3 and Corporate EPIP 1.2.2 and the Nuclear Emergency Plan Drill and Exercise Program.

Drills and exercises at NSP corporate and at the Monticello site are administered by the Manager, Production Training in Corporate Management. He is responsible to assist in development of drills and exercise secnarios. Drills and exercises are conducted in accordance with scenarios. Comments of observers are part of the critique performed for drills and exercises; and are documented by use of Drill Implementation Check Steets, Drill Observer Assignment/Comment Sheets, Emergency Plan Drill Critique and Individual Action Item Assignment Sheets. Management Controls for this program appear to be adequate. The various types of drills and exercises are conducted in accordance with the frequencies prescribed in NUREG-0654.

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

5.5.3 Review, Revision and Distribution of Emergency Plan and Procedures

Telephone numbers for those with emergency response assignments are updated monthly as stipulated in Surveillance Procedures 1225, 1230 and 1240. Procedures which implement the plan are annually updated as needed, and reviewed to assure that they are current. The updates include changes made as a result of critiques following drills and exercises.

The schedule for these procedure reviews is programmed into the licensee computer. Regular computer printouts of scheduled events prompts a review of the specific procedure and designates the individual assigned as a reviewer.

Corporate EPIP 1.2.3, specifies the methods used to maintain NSP Corporate and Plant Emergency Plans and EPIP's. It also provides for periodic reviews of plans and procedures as well as an administrative program that supports the emergency planning effort. One of the procedural reviews listed is to be performed by someone independent of emergency planning.

Distribution of the Corporate Plan and its EPIP's is controlled by the Assistant Administrator, Emergency Preparedness. Current copies are assigned by alphanumeric identities to individuals listed by name as part of the Corporate EPIP's. Distribution of the site plan and related EPIP's is controlled.

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

5.5.4 Audit

The inspector reviewed the licensee's audit program described in Section 11.0, Maintenance of Plans and Procedures, and implemented by EPIP 1.2.3, Maintenance of Emergency Plans and Procedures and EPIP 1.2.4, Surveillances. NSP Corporate and Monticello Site emergency preparedness is audited on an annual basis. An audit is scheduled to be performed in March 1982, and completed by April 1, 1982. The licensee plans to have the audit involve discussions with personnel, inspection of equipment, and a review of the Emergency Plan and EPIP's. The auditors observed the licensee's performance during the March 2, 1982, exercise of the emergency preparedness program.

Based on the above, 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 the Monticello Nuclear Generating Station in the event of a nuclear emergency. Agencies contacted are detailed below individually.

6.1.1 Monticello-Big Lake Community Hospital

The hospital has participated in a medical drill within the last year with the plant. Hospital personnel have received training from the licensee at least annually. A visiting doctor has lectured the hospital staff on the medical effects of radiation on an individual. In addition, the hospital is developing its own training program based on experience in drills and exercises including films of drill participation where an actual licensee's employee was included. The hospital can handle only one patient at a time with radiation injury. The University of Minnesota Hospitals serves as a back-up facility as stated in the Letter of Agreement.

Emergency radiological equipment is provided in a metal cabinet near the Emergency Room for easy access. Besides radiation detection instruments, this inventory includes dosimeters, film badges, protective clothing, plastic sheets and rolls of paper cloth for floor covering, radiation barrier rope, signs and tape. The radiation instruments are checked monthly by a Radiation Protection Specialist. The hospital has a Disaster Procedure Manual which includes a separate procedure for handling patients with radiation injury. This procedure was reviewed by the inspector and found to be thorough and specific including a call list of hospital personnel to be contacted for assistance. The plant's emergency plan is also readily available.

Radio contact is continually maintained between the ambulance and the hospital from the time the ambulance is dispatched to the site. A plant Radiation Protection Specialist accompanies the ambulance and also does monitoring in the hospital emergency room. Contaminated wastes (liquid and solid) are retrieved by plant personnel for later disposal.

The inspector interviewed the Hospital Administrator and a Registered Nurse on duty in the Emergency Room of this hospital as part of the appraisal.

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

6.1.2 Wright County Minnesota Sheriff's Department and Civil Defense Director

The inspector determined that County Sheriff personnel and the Wright County Civil Defense Director have had training given at the Monticello plant. This included film presentations, basic radiation indoctrination and a tour of the plant. The Sheriff's dispatcher knew who to call when an emergency notification is received from the plant. Also, he demonstrated to the inspector how to activate the sirens for the prompt public notification system with the encoder mechanism.

The Chief Deputy Sheriff assumes the active responsibility for responding to a nuclear emergency. He has a c r-coded EPZ map of the county with locations marked where road blocks would be positioned. The county, including the Civil Defense Director, did participate in the recent plant exercise and fully activated their EOC. The EOC is well equipped with status

boards, tables, title placards, telephones, two-way radios and a tone alert radio transmitter. Accommodation is also made for a State Highway Patrol representative in this EOC.

A part-time occupied office for the State Highway Patrol adjoins the county EOC facility, and would serve as a mustering point in an emergency for any patrolman assigned to this geographical area. The State Highway Patrol's District Office is in St. Cloud, Minnesota. The State police have some radiation detection instruments which can be utilized. This police unit would assist the Sheriff's police in traffic control, loud speaker announcements and placement of road blocks.

One suggestion that the County would like to act on as a result of the recent Monticello exercise would be to install a direct telephone line from the plant to the County EOC. The inspector agreed with this suggestion. This would eliminate the present setup where all such calls go through the Sheriff's dispatcher, which tends to overload the telephone lines. This suggestion has not been fully acted upon at this time, but is being strongly considered.

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

- A dedicated telephone line from the plants EOF and TSC should be installed to the Wright County EOC.

6.1.3 City of Monticello, Civil Defense Department

The inspector interviewed the Civil Defense Director of the City of Monticello to determine the city's capability to respond to a nuclear emergency. The city's EOC was activated in the recent Monticello exercise. The Director is scheduled for a FEMA training course soon, and also has had some orientation training at the plant. He has a tone alert radio in his home which is used to receive messages from the plant in case of a nuclear emergency. Overall, he felt that the city of Monticello had a good relationship with Northern States Power Company.

One significant item resulting from the recent Monticello emergency exercise was the long time lag for the city's EOC to get information indicating radiation plume location and other pertinent data from the plant. This information by procedure has to come from the plant to the State, then county, then city. The city is less than five miles from the plant, and they feel some system should be devised to get information sooner to the city. Over 1 1/2 hours was taken for the city to receive certain information in the recent exercise. The inspector suggested contacting a local FEMA representative or the licensee's State Liaison Office.

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

6.1.4 Monticello Fire Department

The inspector interviewed the Assistant Fire Chief of this 25-member volunteer fire department. He was knowledgeable of his and the department's responsibility as the primary support agency for fire fighting at the plant. The department has had orientation training at the plant and at their fire house plus participation in a fire drill at least annually.

Three fire vehicles constitute the motorized capability of this small fire department. Three Self-Contained Breathing Apparatus (SCBA) units are available. Extra air bottles and complete SCBA units are available from the Buffalo, Minnesota, Fire Department nine miles away. However, several extra SCBA units are available at the plant in Warehouse No. 2. This fire department does not have the means to refill their compressed air bottles. This also can be done by the Buffalo Fire Department or at the plant.

The back-up fire department is Big Lake, Minnesota; however, the Buffalo Fire Department can also assist. The Monticello Fire Department has a copy of the Monticello Emergency Plan available for reference. Contacts for fire assistance is by direct telephone from the plant. A radio receiver is also available which receives from the Wright County Sheriff's office or from the plant. All firemen have pagers which are activated when a call comes in to the fire house.

A Letter of Agreement with the plant was not available. This item is reported in Section 6.1.5.

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

6.1.5 Letters of Agreement

The inspector's review of the licensee's files indicated that all the Letters of Agreement were over one year old, some as late as December 1980. There was no Letter of Agreement for the Monticello Fire Department. The contents of the letters were in general specific, descriptive and appeared to delineate the authority and limitations of the support agencies satisfactorily.

The Assistant Administrator, Emergency Preparedness, informed the inspector that a complete review and updating of these Letters of Agreement will be made as part of the annual review of the Emergency Preparedness Program. This review, which also includes the support agencies for the Prairie Island Plant, is scheduled for completion in approximately three months.

Additional findings regarding letters of agreement can be found in Section 2.2 of this report.

Based on the above findings, this portion of the licensee's program appears to be adequate. However, the following items should be considered for improvement:

- The Letters of Agreement should be updated and reviewed for content by July 1982.

- A Letter of Agreement should be issued either directly with the Monticello Fire Department or as a part of the City of Monticello Letter of Agreement.

6.2 General Public

A recent new distribution of emergency planning information in a booklet was mailed to all residents within the 10-mile EPZ. The inspector confirmed at several area locations that residents have received this booklet, titled "Emergency Planning Guide for Neighbors of Monticello Generating Station." Content of the booklet was considered satisfactory by the inspector. A small yellow-colored brochure emphasizing an emergency evacuation plan for the Monticello Nuclear Plant was distributed several months ago at county and city government offices, banks, hospitals, supermarkets, nursing homes, and other public gathering places. This was confirmed by the inspector at several of these places within the 10-mile EPZ. However, no pamphlets or brochures were found at the Silver Fox Inn Motel in Monticello or at the City Hall of the town of Big Lake.

Coverage for the transient population was difficult to assess by the inspector due to weather conditions and closing of many park entrances for the winter season. Some transients can receive emergency information in the stores and places of business specified earlier. The licensee's method of distribution is for county and city civil defense agencies to distribute brochures and pamphlets to those areas where the transient population would congregate. Parks and campsites have not received this information as of the date of inspection.

The corporate office is currently distributing three separate pieces of information including a map of the Monticello area, a newsletter from the Monticello Plant and the booklet described in the first paragraph. These three items are being sent to the Division of Emergency Services at St. Paul, the State Capitol. The plan is for this State agency to then distribute the information to the County and City Civil Defense Agencies. The Assistant Administrator, Emergency Preparedness, assured the inspector that these three pieces of emergency planning information will be distributed to city and county level within the next two weeks.

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

- Emergency preparedness information should be distributed to those areas serving the transient population particularly parks, campsites, nearsite motels and hotels, and nearsite municipal buildings (i.e., Big Lake City Hall).

6.3 News Media

The licensee's program for dissemination of information to the news media as well as familiarizing the news media with emergency planning, basic radiation information, accident sequences, and normal plant operation versus accident operation, among other topics, is handled from the corporate office. The licensee conducts a yearly seminar to which members of the press are invited. This seminar covers areas which are vital to accurate news coverage of topics listed above and specific information on plant operation, plus a description of the news center itself. This seminar is well attended by Minneapolis news media. Other information relating to this topic is described in Section 5.4.7, since these two sections overlap.

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

6.4 Prompt Public Notification System

The siren warning system was installed and operationally tested before the NRC-required February 1, 1982, deadline. There are 24 sirens installed in Sherburne County and 29 in Wright County. The sirens will be activated by radio control under authority of the Wright and Sherburne County Sheriffs' offices upon notification from the Monticello plant. An encoder located in the Sheriff's dispatcher's office is punched which activates a radio transmitter which in turn activates all the sirens in the county at one time. The inspector reviewed the system in the Wright County office and after interviewing the dispatcher and the Deputy Sheriff was assured that they knew the system and could accurately activate the siren system.

Two defective radio receivers were detected as a result of the siren testing. The licensee has agreed to correct this deficiency within 120 days as required by 10 CFR Part 50.54(s)(2). Besides the siren system, tone alert radios have been placed at institutions, schools and factories with assistance from the local Civil Defense organizations. These tone alert radios have been functionally tested before being turned over to the Civil Defense authorities for distribution. Some reception difficulties have been found at certain locations. The licensee is presently taking corrective actions to resolve these conditions.

After the sirens have been activated, the National Weather Service broadcasts an instructional message to the public over commercial radio as part of the Emergency Broadcasting System. The sirens were successfully activated in the recent full-scale exercise.

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

7.0 Drills, Exercises and Walk-throughs

7.1 Program Implementation

The licensee has conducted drills and exercises in accord with plans and procedures (see Section 5.5.2). The annual exercise was conducted during

the first week of March 1982. During this exercise, the inspectors conducted verification tests on the public evacuation siren and the onsite emergency alarm system.

The applicable drills and the annual exercise was coordinated with offsite agencies and participatory groups. Comments were received and used where applicable. Changes to EPIP's and other procedures have been made as the result of findings during drills and exercises.

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

7.2 Walk-Through Observations

The inspectors conducted walk-throughs on: (1) emergency detection, (2) emergency classification, (3) notifications, (4) emergency sampling and analysis, (5) dose calculations, and (6) protective actions. These walk-throughs and the results are discussed in the following sections.

7.2.1 Emergency Detection

The inspectors conducted walk-throughs on each shift with the Site Superintendent and their staffs to determine the capability to detect emergencies from incipient to final stages. Different scenarios were developed for each shift to include such items as broad range of EAL's covering seismicity, external and internal electrical power losses and loss of reactor coolant. Some of the scenario EAL's were selected to require simultaneous classification of two events. These same EAL's were used for requiring classification of the emergency, notification, corrective and protective actions, and in three cases dose assessment.

All of the Site Superintendents used annunciator and abnormal operating procedures to properly detect the emergency.

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

7.2.2
& 7.2.3 Emergency Classification and Notifications

Several walk-through scenarios, as initiated in 7.2.1, led to emergency classifications and notifications. All events initiated were properly classified and notifications were demonstrated.

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

7.2.4 Dose Calculations

Walk-throughs were also conducted with the radiological emergency dose calculation coordinators. The persons assigned this responsibility were able to make the calculations without referring to the procedures. However, additional qualified personnel, as discussed in Section 3.2,

could be needed during the first 30 to 60 minutes of an emergency, and expansion of the training program for such persons was recommended.

7.2.5 Emergency Sampling and Analysis

The inspectors conducted walk-throughs with each shift of Radiation Protection Specialists and Chemistry Radiation Protection Specialists. The walk-throughs conducted included:

1. Inplant surveillance, sampling and analysis,
2. Out-of-plant surveillance, sampling and analysis,
3. Offsite surveillance, sampling and analysis,
4. Post-accident release sampling and analysis,
5. Containment sampling and analysis, and
6. Decontamination.

With one exception, as addressed in Section 3.2, all of the technicians took the required precautions, obtained the needed samples and conducted the surveillance and/or decontamination actions in accord with procedures.

7.2.6
& 7.2.7 Post-accident Containment Air Sampling and Analysis and Gaseous and Particulate Effluent Sampling and Analysis

Walk-through exercises were conducted of the post-accident sampling capabilities. The inspector observed the post-accident sampling, containment air sampling, stack effluent sampling, and liquid effluent sampling activities conducted by the chemistry technicians. All technicians demonstrated familiarity with the sampling equipment, analysis equipment, and sampling procedures. Equipment and facilities necessary to obtain the sample were specificed in the procedures. The interim sampling facilities were in place and operable. The procedures were understandable to the user, up-to-date and complete. No impediments were observed which prevented timely and effective collection of the samples.

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

7.2.8 Protective Actions

Corrective and protective actions were covered in the walk-throughs discussed in Sections 7.2.1, 7.2.2, 7.2.3 and 7.2.5. The results of these walk-throughs are discussed in Sections 3.2 and 5.4.2.

8.0 Persons Contacted

*W. Shamla, Plant Manager
*G. Mathiasen, Emergency Planning Coordinator
*W. Hill, Superintendent, Technical Engineering
M. Hammer, Lead I&C Engineer
E. Seedorff, I&C Coordinator
*J. Peterson, Chemistry Coordinator
*K. Jepson, Plant Chemist
M. Davis, Radiation Protection Specialist

W. Albold, Superintendent of Maintenance
R. Fiedler, Plant Equipment and Reactor Operator
D. Cox, L.P.E. and R.O.
K. Haugen, P.E. and R.O.
R. Lagergren, L.P.E. and R.O.
W. Yuna, Contractor - Main Access Control
P. Yurczyk, Radiation Protection Coordinator
L. Offutt, Plant Administration Specialist, Warehouse
*B. Schmitt, Radiation Protection Instructor
*G. Goering, General Superintendent Technical Services
E. Reilley, TSC Scheduling Coordinator
A. Hoffmann, Nurse
E. Opatz, Radiation Protection Specialist
R. Rohland, L.P.E. and R.O.
**J. Powers, Chief Deputy Sheriff, Wright County
**G. Reese, Wright County Civil Defense Director
**L. Klein, Civil Defense Director, City of Monticello
T. Gallagher, Pinkerton Guard Lieutenant
**G. Hudson, Asstistant Administrative Emergency Preparedness
J. Gonyeau, Manager Production Training
**C. Ballard, General Electric Company
**W. Anderson, Plant Superintendent, Operations and Maintenance
O. Iverson, Production Engineer
W. Dhein, Site Superintendent
W. Boehme, Site Superintdnetnt
M. Onnen, Site Superintendent
M. Brant, Site Superintendent
C. Stein, Chemistry Technician
J. Muscartella, Radiation Protection Specialist
D. Silkin, Radiation Protection Specialist
D. Orrock, Radiation Protection Specialist
E. Pangelinan, Radiation Protection Specialist
E. Lieffring, Chemistry - Radiation Protection Specialist
R. Roy, Radiation Protection Specialist
*F. Fey, Superintendent Radiation Protection
L. Nolan, Lead Chemical Engineer
*R. Jacobson, Senior Chemist
S. Pearson, Superintendent, Operations
B. Day, Superintendent, Nuclear Technical Services
*G. Earney, Training Superintendent
*G. Neils, General Manager, H.Q. Nuclear Group
**G. Link, Monticello Assistant Fire Chief
*E. Ward, Manager Nuclear Environmental Services
*R. Scheinost, Superintendent Quality Engineering
*M. Clarity, Plant Superintendent Engineering and Radiation Protection
*L. Nolan, Lead Chemistry Engineer
*D. Antony, Superintendent Operator Engineer
*M. Keller, Power Supply Q.A.
*J. Windschill, Asstistant Plant Health Physicist

*Denotes those present at the exit interview.
**Denotes Non-NSP Personnel.

9.0 Licensee Actions on Previously Identified Items Related to Emergency Preparedness

For the purposes of tracking, the following previously identified item is considered closed and has been reopened in the control room section of this report. The previously identified item is as follows:

- Item No. 263/79-09-01

The meteorological data readout in the control room from a vane on the containment building and therefore does not represent the conditions of a stack release. There is only one isodose curve in emergency procedure and it is not representative of the varied meteorological conditions which may be present during a release.

10.0 Exit Interview

The inspectors and a management representative from the region met with licensee representatives (denoted in Paragraph 8) at the conclusion of the appraisal on March 24, 1982. The inspectors summarized the scope and findings of the appraisal.

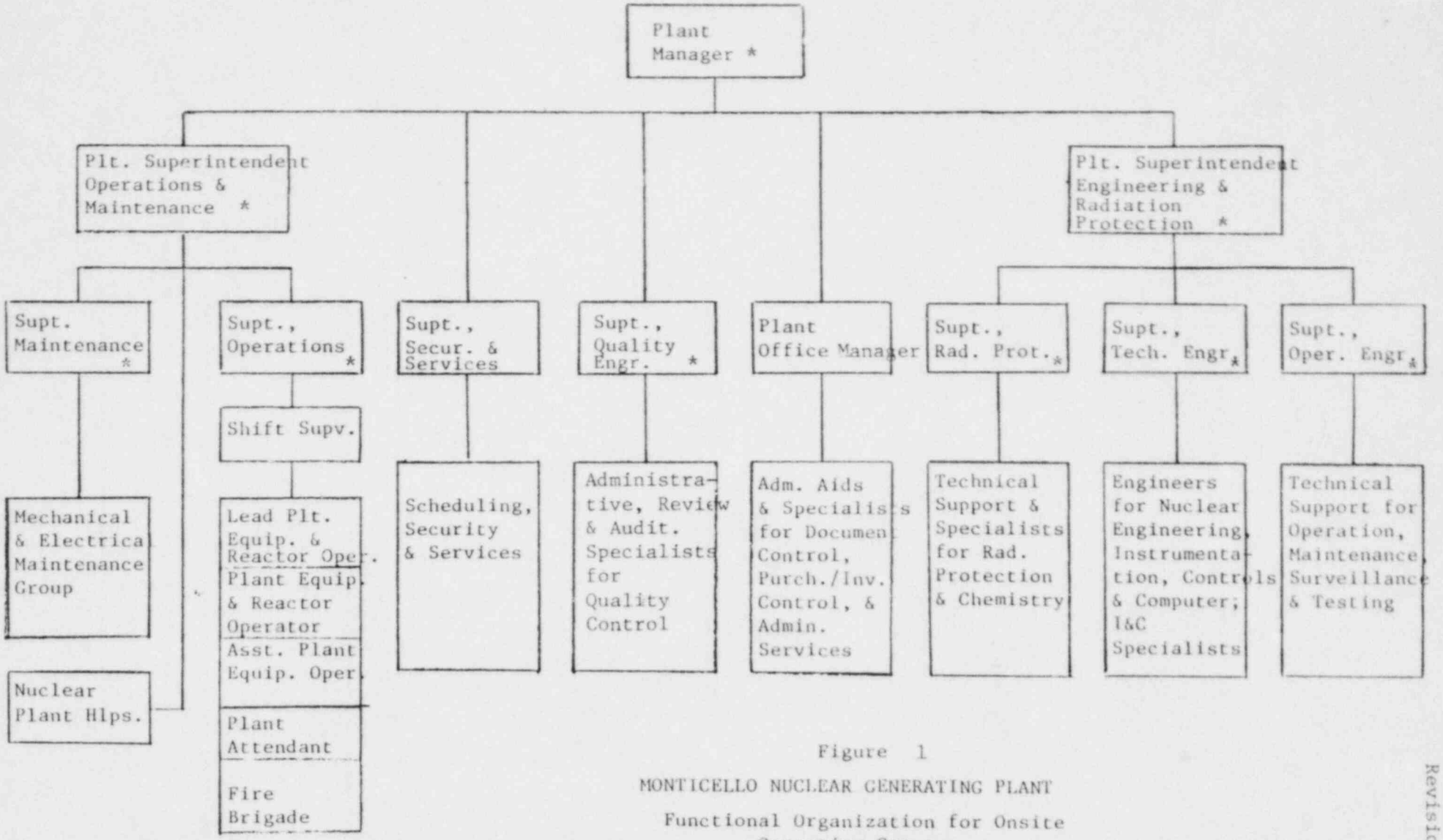

Figure 1

MONTICELLO NUCLEAR GENERATING PLANT

Functional Organization for Onsite Operating Group

Code: * - Key Supervisor

Revision 1

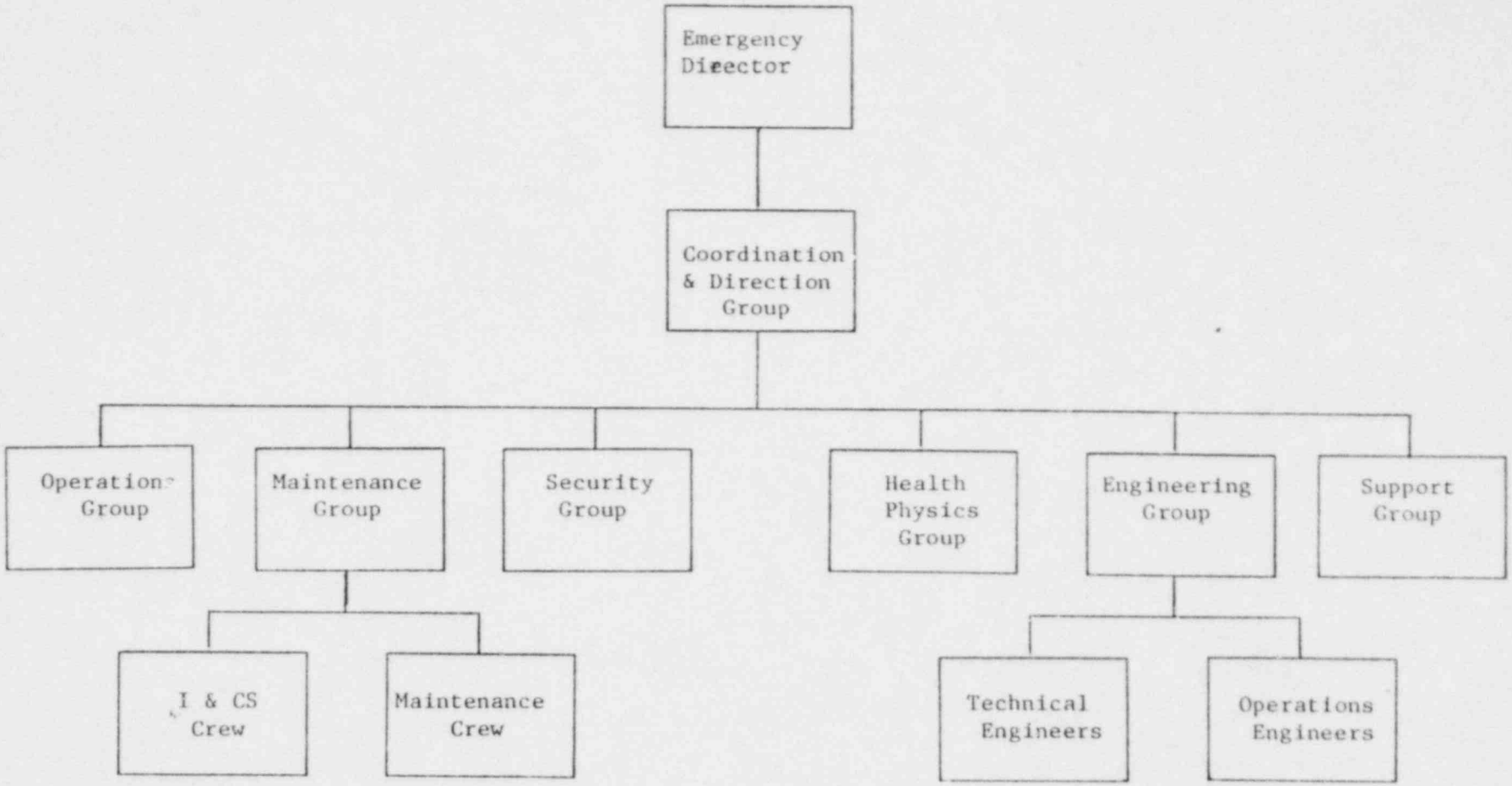

Figure 2

MONTICELLO EMERGENCY ORGANIZATION