118

ISHAM, LINCOLN & BEALE
COUNSELORS AT LAW

1120 CONNECTICUT AVENUE, N.W. • SUITE 840
WASHINGTON, D.C. 20036
202 833-9730

EDWARD S. ISHAM, 1872-1902
ROBERT T. LINCOLN, 1872-1889
WILLIAM G. BEALE, 1885-1927

CHICAGO OFFICE
THREE FIRST NATIONAL PLAZA
CHICAGO, ILLINOIS 60602
TELEPHONE 312 558-7500
TELEX: 2-5288

March 15, 1985

Lawrence Brenner, Esq., Chairman
Administrative Law Judge
Atomic Safety and Licensing
Board
U.S. Nuclear Regulatory
Commission
Washington, D.C. 20555

Dr. Richard F. Cole
Administrative Law Judge
Atomic Safety and Licensing
Board
U.S. Nuclear Regulatory
Commission
Washington, D.C. 20555

Dr. A. Dixon Callihan
Administrative Law Judge
Union Carbide Corporation
P. O. Box "Y"
Oak Ridge, TN 37830

Re: In the Matter of Commonwealth Edison Company
(Braidwood Nuclear Power Station, Units 1 and 2
Docket Nos. 50-456 and 50-457) - OL

Dear Administrative Judges:

Two days ago (March, 13) I served on the Licensing Board and the parties a copy of the Braidwood Station Annex to the Commonwealth Edison Generating Stations Emergency Plan (GSEP). Inasmuch as that document references and can be best understood in the context of the GSEP, a copy of the base volume of the GSEP is provided herewith. Please be advised that a proprietary telephone directory has been deleted from this copy of the GSEP.

Because of the bulk of the GSEP, only one copy is being served on one representative from each party.

Very truly yours,

Joseph Gallo/vac

Joseph Gallo
One of the Attorneys for
Commonwealth Edison Company

JG/mg

cc: Service List

Enclosure

D503

Commonwealth Edison
72 West Adams Street Chicago Illinois
Address Reply to: Post Office Box 767
Chicago, Illinois 60690

April, 1984
Revision 4

Policy Statement

This document has been prepared to delineate the requirements and procedures governing the Commonwealth Edison Company Nuclear Division Generating Stations Emergency Plan (GSEP). Implementation of the GSEP as covered by the Generic Plan and a Site Annex, including both corporate and site Emergency Plan Implementing Procedures (EPIPs), provides a degree of assurance that the number of adhoc decisions made during an emergency are minimized. The GSEP ensures that necessary equipment, supplies, and essential services are available to meet the needs of an emergency in order to provide for the health and safety of the public, including Commonwealth Edison employes, the limitation of damage to facilities and property, and the restoration of such facilities.

Implementation of the GSEP provides for compliance with applicable requirements of the Nuclear Regulatory Commission, Federal Emergency Management Agency, States of Illinois, Iowa, Wisconsin and appropriate local governments, and their applicable emergency plans.

The Division Vice President & General Manager, Nuclear Stations, is assigned the overall responsibility for implementation of the Generating Stations Emergency Plan. Authority and responsibility are assigned to the Technical Services Manager, Nuclear Services, for directing and administering the GSEP with respect to each nuclear generating station and for corporate personnel. Actual development, revisions and conceptual design of the generic GSEP, Site Annexes and EPIPs are responsibilities assigned to the Supervisor of Emergency Planning.

The scope of the GSEP covers all nuclear generating stations both during the licensing phase and during their operation.

Cordell Reed April 5, 1984
C. Reed Date
Vice President Nuclear Operations

#1297D

Commonwealth Edison
72 West Adams Street Chicago Illinois
Address Reply to: Post Office Box 767
Chicago, Illinois 60690

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Cordell Reed April 5, 1984
C. Reed Date
Vice President Nuclear Operations

#12970

April, 1984
Revision 4

Commonwealth Edison Company

GENERATING STATION EMERGENCY PLAN

(GSEP)

Reviewed by: _____ 4/5/84
Supervisor of Emergency Planning — Date

Approved by: _____ 4/5/84
Technical Services Manager — Date

Authorized by: _____ 4/5/84
Division Vice-President and
General Manager, Nuclear Stations Division — Date

GENERATING STATIONS EMERGENCY PLAN (GSEP)

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SITE SPECIFIC ANNEXES

A. Dresden Station Emergency Plan Annex

B. Quad Cities Station Emergency Plan Annex

C. Zion Station Emergency Plan Annex

D. LaSalle Station Emergency Plan Annex

E. Byron Station Emergency Plan Annex

F. Braidwood Station Emergency Plan Annex (Later)

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LISTING OF ACRONYMS

A/E	Architect/Engineer
ALARA	As Low As Reasonably Achievable
ANI	American Nuclear Insurers
ASLB	Atomic Safety Licensing Board
BEOF	Backup Emergency Operations Facility
BWR	Boiling Water Reactor
CCC	Corporate Command Center
CCP	Community Command Post
CECO	Commonwealth Edison Company
CEOC	County Emergency Operation Center
CFR	Code of Federal Regulations
DEG	Department of Emergency Government (Wisconsin)
DEQ	Department of Environmental Quality
DNS	Department of Nuclear Safety (Illinois)
DOE	Department of Energy
EAL	Emergency Action Level
EBS	Emergency Broadcast System
ECCS	Emergency Core Cooling System
ENC	Emergency News Center
ENS	Emergency Notification System (NRC)
EOC	Emergency Operations (or Operating) Center
EOF	Emergency Operations Facility
EPA	Environmental Protection Agency
EPIP	Emergency Plan Implementing Procedure
EPZ	Emergency Planning Zone
ERF	Emergency Response Facility
ERP	Emergency Restoration of Power
ESDA	Emergency Services and Disaster Agency (Illinois)
FBI	Federal Bureau of Investigation
FEMA	Federal Emergency Management Agency
FDA	Food and Drug Administration
FRMAP	Federal Radiological Monitoring and Assessment Plan
FRPCC	Federal Radiological Preparedness Coordinating Committee
GSEP	Generating Stations Emergency Plan
HPN	Health Physics Network (NRC)
INPO	Institute of Nuclear Power Operations
IPRA	Illinois Plan for Radiological Accidents
IRAP	Interagency Radiological Assistance Plan
JPIC	Joint Public Information Center
KI	Potassium Iodide
LGEOC	Local Government Emergency Operations Center
MAELU	Mutual Atomic Energy Liability Underwriters
NARS	Nuclear Accident Reporting System
NAWAS	National Warning System
NCRP	National Council on Radiation Protection
NDL	Nuclear Data Link
NDO	Nuclear Duty Officer
NRC	Nuclear Regulatory Commission
NSSS	Nuclear Steam Supply System
OBE	Operating Basis Earthquake

LISTING OF ACRONYMS
(Continued)

ODCS	Offsite Dose Calculation System
ODS	Office of Disaster Services (Iowa)
OSC	Operational Support Center
OSC	On-Scene Coordinator (Coast-Guard)
PA	Public Address
PAG	Protective Action Guide
P&ID	Piping and Instrument Diagram
PNS	Prompt Notification System
PWR	Pressurized Water Reactor
RAC	Regional Advisory Committee
RAFT	Radiological Assistance Field Team
RAP	Radiological Assistance Plan
REAC	Radiological Emergency Assessment Center
RF	Radio Frequency
SCP	State Command Post
SCRE	Station Control Room Engineer
SEOC	State Emergency Operations Center
SHL	State Hygienic Laboratory
SPCC	Spill Prevention Control and Countermeasure
SPDS	Safety Parameter Display System
SPSO	System Power Supply Office
SRC	State Radiological Coordinator
SRO	Senior Reactor Operator (NRC Licensed)
SSC	State Staging Center
SSE	Safe Shutdown Earthquake
STA	Shift Technical Advisor
TLD	Thermoluminescent Dosimeter
TS	Technical Specification
TSC	Technical Support Center
WB	Whole Body

LISTING OF FIGURES

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(Continued)

1.0 SCOPE AND APPLICABILITY

Commonwealth Edison Company (Commonwealth) provides electrical services to three million customers within a service area covering 11,525 square miles. Most of this territory is in northern Illinois and includes about one-fifth of the State. Refer to Figure 1.0-1. In providing its electrical service, Commonwealth is committed to the use of nuclear power and is licensed by the Nuclear Regulatory Commission (NRC) to operate several nuclear generating units within the State of Illinois.

In order to minimize the number of adhoc decisions made during an emergency and to ensure that necessary equipment, supplies, and essential services are available to meet the needs of an emergency, Commonwealth has developed the Generating Stations Emergency Plan (GSEP). The GSEP is an emergency plan applicable to all nuclear generating stations operated by Commonwealth and considers the consequences of radiological emergencies, as required by 10 CFR 50, Paragraph 50.47 and Appendix E. Additionally, the GSEP addresses the supplemental guidance provided by the NRC in the form of NUREG-0654/FEMA-REP-1 (Revision 1, November, 1980). The GSEP also considers the consequences of nonradiological emergencies.

The GSEP provides for the protection of the health and safety of the public, Commonwealth employes, the limitation of damage to facilities and property, and the restoration of such facilities in the event of an emergency. Described in the GSEP is the emergency organization, including assignments of authority and responsibility. These GSEP guidelines provide for: identification and evaluation of emergency situations, protective measures, communications, coordination and notifications of governmental authorities, document review and control, emergency preparedness assessment, and training of all emergency personnel.

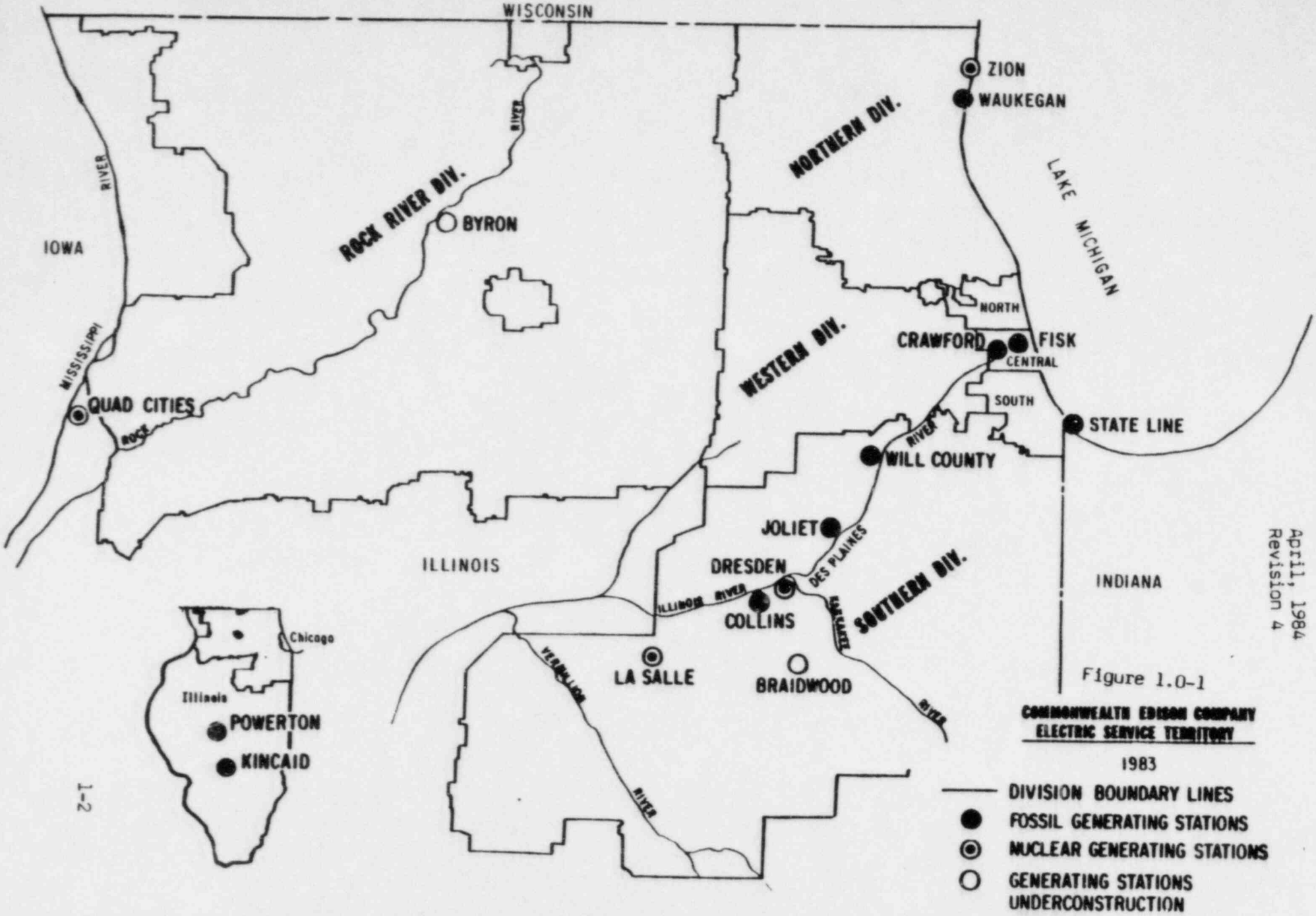

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Figure 1.0-1

COMMONWEALTH EDISON COMPANY
ELECTRIC SERVICE TERRITORY

1983

2.0 DEFINITIONS

2.1 Assessment Actions

Those actions taken during or after an emergency to obtain and process information that is necessary to make decisions to implement specific emergency measures.

2.2 Dedicated Communications

A communications link between two or more locations, access to which is limited to designated locations, and used only for the purpose intended. The communications link may be either telephone or radio.

2.3 Dose

A general term denoting the quantity of radiation or energy absorbed.

2.4 Dose Commitment

The radiation dose equivalent received by an exposed individual to the organ cited over a lifetime from a single event.

2.5 Dose Equivalent

A quantity that expresses all radiation on a common scale for calculating the effective absorbed dose. It is defined as the product of the absorbed dose in rads and certain modifying factors. The unit of dose equivalent is the rem.

2.6 Drill

A supervised instruction period aimed at testing, developing, and maintaining skills in a particular operation. A drill is often a component of an exercise.

2.7 Emergency Action Levels (EAL)

Radiological dose rates, specific concentration levels of airborne, waterborne, or surface-deposited radioactive materials, or specific instrument indications that may be used as thresholds for initiating such specific emergency measures as designating a particular class of emergency, initiating a notification procedure, or initiating a particular protective action.

2.8 Emergency Personnel

Those organizational groups that perform a functional role during an emergency condition. Within Commonwealth, emergency personnel include the directors of the GSEP organization, accident assessment personnel, radiological monitoring teams, fire brigades, first aid teams, and security personnel.

2.9 Emergency Planning Zone (EPZ)

That area surrounding a nuclear station in which emergency planning is conducted for the protection of the public. With respect to protecting the public from the plume exposure resulting from an incident, the EPZ is usually an area with a radius of about 10 miles surrounding the facility. With respect to the ingestion exposure pathway, the EPZ is usually an area with a radius of about 50 miles.

2.10 Essential Personnel

Essential personnel are those needed to achieve the GSEP goals and tasks as deemed necessary by the CCC Director, Recovery Manager and/or Station Director. Identification of essential personnel is circumstance-oriented as determined by the Station Director and/or Recovery Manager.

Personnel identified as essential will vary with time, emergency classification, and circumstances at each generating station or emergency response facility.

2.11 Exercise

An event that tests the integrated capability and a major portion of the basic elements existing within an emergency plan. An exercise usually involves participation of personnel from State and local governments, utility personnel, and may involve participation of Federal government personnel.

2.12 GSEP

A document called the Generating Stations Emergency Plan that consists of two parts:

1) A generic plan that contains emergency planning information common to all Commonwealth nuclear stations; and

2) Site specific annexes that contain detailed emergency planning information unique to each nuclear station.

2.13 Hazardous Material

A substance or material which has been determined by the United States Secretary of Transportation to be capable of posing an unreasonable risk to health, safety, and property when transported in commerce, and which has been so designated in 49 CFR 172.

2.14 Imminent

Ready to take place; an event that will happen in the near future. The probability that an event will occur is projected to be 100%.

2.15 Non-essential site personnel

Those personnel not needed for the continuing existence or functioning of the GSEP response organization. They are personnel not required to fill certain positions in the GSEP organization. Identification of non-essential personnel is circumstance-orientated as determined by the Station Director, Recovery Manager and/or CCC Director.

Examples of non-essential personnel might be:

- Non-station CECo personnel
- Contractor personnel
- Vendor (Sales) personnel
- Delivery persons
- Public
- Non-emergency government personnel
- Non-emergency CECo personnel

2.16 Nuclear Station

"Nuclear Station" as used herein refers to Commonwealth Edison nuclear generating stations.

2.17 Offsite

That area around a nuclear generating station which lies outside the station's "site boundary".

2.18 Onsite

The area around a nuclear generating station which lies within the station's "site boundary".

2.19 Potential

Existing in possibility; an event that may or may not occur; the probability that an event will occur is less than 50%.

2.20 Probable

Supported by evidence strong enough to establish presumption but not proof; an event that is likely to occur; the probability that an event will occur is greater than or equal to 50%.

2.21 Projected Dose

That calculated dose commitment that some individuals in the population group may receive if no protective actions are implemented. Projected doses are calculated to establish an upper limit boundary.

2.22 Protected Area

That onsite area within the security boundary as defined in each station's Security Plan.

2.23 Protective Action Guides (PAG)

Projected radiological dose or dose commitment values to individuals in the general population that warrant protective action.

Protective Action Guidelines are criteria used to determine if the general population needs protective action regarding projected radiological doses, or from actual committed (measured) dose values.

2.24 Protective Actions

Those emergency measures taken for the purpose of preventing or minimizing radiological exposures to affected population groups.

2.25 Shall, Should, and May

The word "shall" is used to denote a requirement, the word "should" to denote a recommendation, and the word "may" to denote permission, neither a requirement nor a recommendation.

2.26 Thyroid Blocking Agent

An agent which when properly administered to an individual will result in sufficient accumulation of stable iodine in the thyroid to prevent significant uptake of radioiodine. Potassium Iodine is such an agent.

2.27 Worst Case Meteorology

Atmospheric dispersion conditions which are expected to occur only 5% of the time, i.e., conditions should be more favorable 95% of the time.

3.0 SUMMARY OF GENERATING STATION EMERGENCY PLAN (GSEP)

The Division Vice-President and General Manager, Nuclear Stations, is responsible for the safe and reliable operation and maintenance of nuclear generating stations within Commonwealth Edison. This individual reports to the Vice-President Nuclear Operations and has line responsibility for the administration, management, and direction of all Nuclear Stations Division activities at operating nuclear stations. The Division Vice-President and General Manager, Nuclear Stations, is also responsible for radiological emergency planning within Commonwealth Edison.

The Generating Stations Emergency Plan (GSEP) is a written emergency plan that establishes the concepts, evaluation and assessment criteria, and protective actions that are necessary in order to limit and mitigate the consequences of potential or actual radiological emergencies. The GSEP provides the necessary prearrangements, directions, and organization so that all nuclear emergencies can be effectively and efficiently resolved in order to safeguard station personnel, property, and the general public.

The GSEP consists of two parts, a generic plan applicable to all generating stations, and a site specific annex for each nuclear generating station containing information and guidance that is unique to a particular station.

3.1 GSEP Organization

The GSEP organization consists of directors and staff personnel who shall ensure timely activation and implementation of emergency responses. The GSEP organization can be divided into two functional areas: onsite and offsite.

3.1.1 Onsite Emergency Organization

The onsite GSEP organization consists of a Station Group that is primarily concerned with emergency response efforts necessary to control the plant during an incident.

The Station Group functions under a Station Director for organizing and coordinating the emergency efforts at and within the immediate vicinity of the station. Collectively, members of the Station Group provide for the following activities during an emergency:

1) Plant systems operations

2) Radiological survey and monitoring

3) Firefighting

4) Rescue operations

5) First aid

6) Decontamination

7) Security of plant and access control

8) Repair and damage control

9) Personnel accountability

10) Record Keeping

11) Communications

The responsibility for initial assessment of and response to an emergency rests with the Shift Engineer. The Shift Engineer is the initial Station Director and has the Station Director's responsibilities and authority until relieved of those responsibilities by the designated Station Director or his alternate (See Section 4.2). The Station Director is responsible for making the initial determination of the severity of the emergency and for activation of the GSEP as appropriate in accordance with the guidance provided in the generic GSEP, the site specific annex, and the station's implementing procedures.

3.1.2 Offsite Emergency Organization

The offsite GSEP organization consists of corporate and division personnel. This offsite organization is supported by environmental assessment staff and monitoring teams that provide long-term support to the affected station. These organizations consist of a Corporate Command Center Group and/or an Emergency Operations Facility Recovery Group. This Offsite GSEP organization also have liaison responsibilities with Federal, State, and local authorities.

During the less serious emergencies, the GSEP Corporate Command Center Group is responsible for evaluating, coordinating, and directing the overall company activities involved in coping with the emergency. The Corporate Command Center Group functions under a Director and its responsibilities include command and control, intelligence, logistics, engineering support, medical care, manpower requirements, communications, accounting, legal, health physics, environmental, and news information.

During the more serious emergencies the GSEP Recovery Group at the affected station's Emergency Operations Facility (EOF) is responsible for evaluating, coordinating and directing the overall company activities both at the Corporate Command Center and Technical Support Center. Once the Recovery Group is activated, the CCC Group becomes a support staff. (See Section 4.3).

3.2 Classification of Emergencies

The GSEP provides for classification of emergencies into six (6) categories. The first category, Transportation Accident, concerns an emergency involving the transportation of radioactive or other hazardous material from a generating station. The next four (4) categories: Notification of Unusual Event, Alert, Site Area Emergency, and General Emergency address emergencies of increasing severity (See Section 5.0). The sixth category is Recovery: that period when the emergency phase is over and activities are being taken to return the situation to a normal state (acceptable condition). Herein, Notification of Unusual Event will be referred to as Unusual Event, and Site Area Emergency will be referred to as Site Emergency.

An emergency condition may be classified for purposes of reporting to offsite agencies, by the following persons:

1. Shift Engineer or alternate in line of succession as defined in Section 4.2 while acting as the initial Station Director;
2. Station Director while in the Control Room or TSC until the Corporate Command Center Director or Recovery Manager assumes responsibility for the emergency situation.
3. Corporate Command Center Director while at the CCC until the Recovery Manager assumes responsibility for the emergency situation.
4. Recovery Manager while at the EOF or other emergency response facility

Following an event classification (reference Section 5.0), the emergency measures described in Section 6.0 shall be taken if not already underway. The initial notification of cognizant offsite government agencies shall be made within fifteen (15) minutes of classification or reclassification of the event. Regarding rapidly developing emergency conditions, classification or reclassifications by the (Acting) Station Director may be made with consultation with the designated CCC Director or Recovery Manager, as appropriate. Nevertheless this decision/consulting time shall be used expeditiously to prevent, excessive delay between occurrence of the event and declaration of the classification or change.

Regardless of who makes the classification, the time spent in consultation with technical advisors, governmental agencies, administrative assistants, or any other support personnel supplying information to the decision maker prior to making the classification decision IS NOT included in the fifteen (15) minute time requirement for notification.

Emergency Action Levels (EAL's) are for unplanned events. Controlled activities designed to test systems and equipment that create an EAL are not subject to GSEP reporting and activation requirements as long as the test proceeds as planned. This condition may be subject to the reporting requirements of 10CFR50.72 effective January 1, 1984.

3.3 Emergency Measures

Emergency measures to be taken for each class/category of emergency are identified in the GSEP. Emergency measures begin with activation of the emergency organization. Subsequent measures are generally organized into assessment actions, corrective actions, protective actions, and aid to affected persons (See Section 6.0).

3.4 Facilities and Equipment

The GSEP identifies onsite and offsite facilities available for emergency assessment, communications, first aid and medical care, and damage control. Of particular importance are the emergency support centers: the Technical Support Center (TSC), the Operational Support Center (OSC), the Corporate Command Center (CCC) and the Emergency Operations Facility (EOF) and appropriate Backup Emergency Operations Facility. (BEOF) (Refer to Section 7.0).

3.4.1 Technical Support Center (TSC)

The Technical Support Center (TSC) is the onsite location utilized by plant management, technical, and engineering support personnel to support the Control Room command and control function, for assessment of plant status and potential offsite impact, and for implementation of emergency actions.

3.4.2 Operation Support Center (OSC)

The Operational Support Center (OSC) is the onsite location where support personnel will report to during an emergency and where they will be dispatched for assignment or duties in support of emergency operations.

3.4.3 Corporate Command Center (CCC)

The Corporate Command Center (CCC), located at 72 West Adams, Chicago, is the location where the Corporate Command Center Director will normally direct a staff in evaluating, coordinating, and directing the overall company activities involved with an emergency. If the Recovery Group is activated at the EOF, then the CCC will be the location for a support staff reporting to the Recovery Group.

If the EOF facility for the station is declared to be inoperative then the CCC facility and organization may be designated by the appropriate CECo officials as the location and where overall company emergency response activities will be directed.

3.4.4 Emergency Operations Facility (EOF)

The Emergency Operations Facility (EOF) that is located near the station provides for the management of overall emergency response, coordination of radiological assessments, and management of recovery operations. The organizations at this EOF function under a Recovery Manager and are activated for all Site and General Emergency situations. Activation of any EOF for other emergency situations is optional per the directions of CECo Station Director/CCC Director or Recovery Manager.

All EOF's are physically designed to function in a similar manner regarding voice communication and data transmission. Thus each EOF may be used as a back-up for an inoperative EOF.

3.4.5 Back-up Emergency Operations Facility (BEOF)

The Zion Back-up EOF, a facility located approximately 15 miles from the Zion plant in a portion of the Lake County Emergency Operations Center, provides the functions of the EOF if evacuation of personnel from the Zion EOF is required. Only Zion Nuclear Power Station has a back-up EOF.

Relocation from the Zion EOF to the Zion BEOF is determined by the Recovery Manager at the Zion EOF. The Recovery Manager determines the essential personnel to be relocated to the BEOF and the staging area to which the remaining personnel (non-essential) are to be relocated.

3.5 Maintaining Emergency Preparedness

The GSEP describes the means to ensure that this plan will continue to be effective throughout the lifetimes of Commonwealth nuclear stations. Emergency preparedness includes training, exercises and drills, review and updating of the GSEP and procedures, as well as the administration of public information programs (See Section 8.0).

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4.0 ORGANIZATIONAL CONTROL OF EMERGENCIES

Emergency planning must consider the capabilities of the normal plant organization, the onsite and offsite emergency organizations of Commonwealth Edison, and the offsite non-Commonwealth Edison emergency response agencies. The initial phases of an emergency situation at a nuclear station shall involve a relatively small number of individuals. These individuals must be capable of: (1) determining that an emergency exists; (2) providing initial classification and assessment; and (3) promptly notifying other groups and individuals in the emergency organization. The subsequent phases of the emergency situation may require an increasing augmentation to the emergency organization.

4.1 Normal Plant Organization

The normal plant organization is basically the same for all Commonwealth nuclear stations and is depicted in Figure 4.1-1.

4.1.1 Station Superintendent

Each Commonwealth nuclear station is managed by a Station Superintendent who is responsible for management of the station, including Industrial Relations, planning, coordination, direction of the operation, maintenance, refueling, and technical activities. The Station Superintendent is responsible for compliance with the station NRC operating license, government regulations, ASME Code requirements, and the Commonwealth Quality Assurance Program. He also authorizes the use of procedures contained in the station procedures manuals and is responsible for final approval and distribution, and retention of documentation of station reports. The Station Superintendent authorizes all modifications to the station after the issuance of an Operating License and completion of preoperational testing. He forwards requests for modifications to the Commonwealth Edison Station Nuclear Engineering Department. The Superintendent supervises the Station's onsite review function as provided in the station Technical Specifications.

During an emergency situation, the Station Superintendent normally acts as the GSEP Station Group Director.

4.1.2 Succession of Authority

The Station Superintendent has overall responsibility for station operation. During periods when the Superintendent is unavailable, this responsiblity is designated to alternates who satisfy the requirements of ANSI N18.1-1971, "Experience Requirements for Plant Manager."

4.1.3 Shift Engineer

The Shift Engineer on duty is responsible for operating the plant in compliance with the station NRC operating license and the station operating procedures. During his shift, the Shift Engineer is in charge of the entire plant operation and is responsible for the plant being operated in a safe and reliable condition. He receives direction from the Operating Assistant Superintendent. The authority and responsibility of the operating shift engineer/foremen and shift crews include:

1) The reactor operator's authority and responsibility for shutting down the reactor when he determines that the safety of the reactor is in jeopardy or when operating parameters exceed any of the reactor protection circuit setpoints and automatic shutdown does not occur;

2) The responsibility to determine the circumstance, cause, and limits under which operations can safely proceed before the reactor is returned to power following a trip or an unscheduled or unexplained power reduction;

3) The Shift Engineer's responsibility to be present at the plant and to provide direction for returning the reactor to power following a trip or an unscheduled or unexplained power reduction;

4) The responsibility to adhere to the station Technical Specifications;

5) The responsibility to review routine operating data to assure safe operation; and

6) The responsibility to adhere to plant operating procedures and the requirements for their use (However, during an emergency, operations personnel are authorized to depart from approved procedures where necessary to prevent injury to personnel, including the public, or damage to the facility).

A Shift Engineer is on duty 24 hours a day and is the initial GSEP Station Director. While serving in this capacity the Shift Engineer has the authority for declaring an emergency and recommending protective actions to State authorities (Reference Section 6.3.1 and Figure 6.3-1 (a) & (b)).

4.1.4 Station Control Room Engineer (SCRE) - Shift Technical Advisor (STA)

During normal plant operation the SCRE/STA, who reports to the Shift Engineer, directly supervises the licensed Reactors Operators and all activities in the control room. During an abnormal event of sufficient seriousness to require detached technical assessment, the Shift Engineer assumes direct supervision of personnel and all activities in the control room while the SCRE/STA steps back and assumes a role of overview as an STA with the specific responsibility of monitoring the maintenance of core cooling and containment integrity.

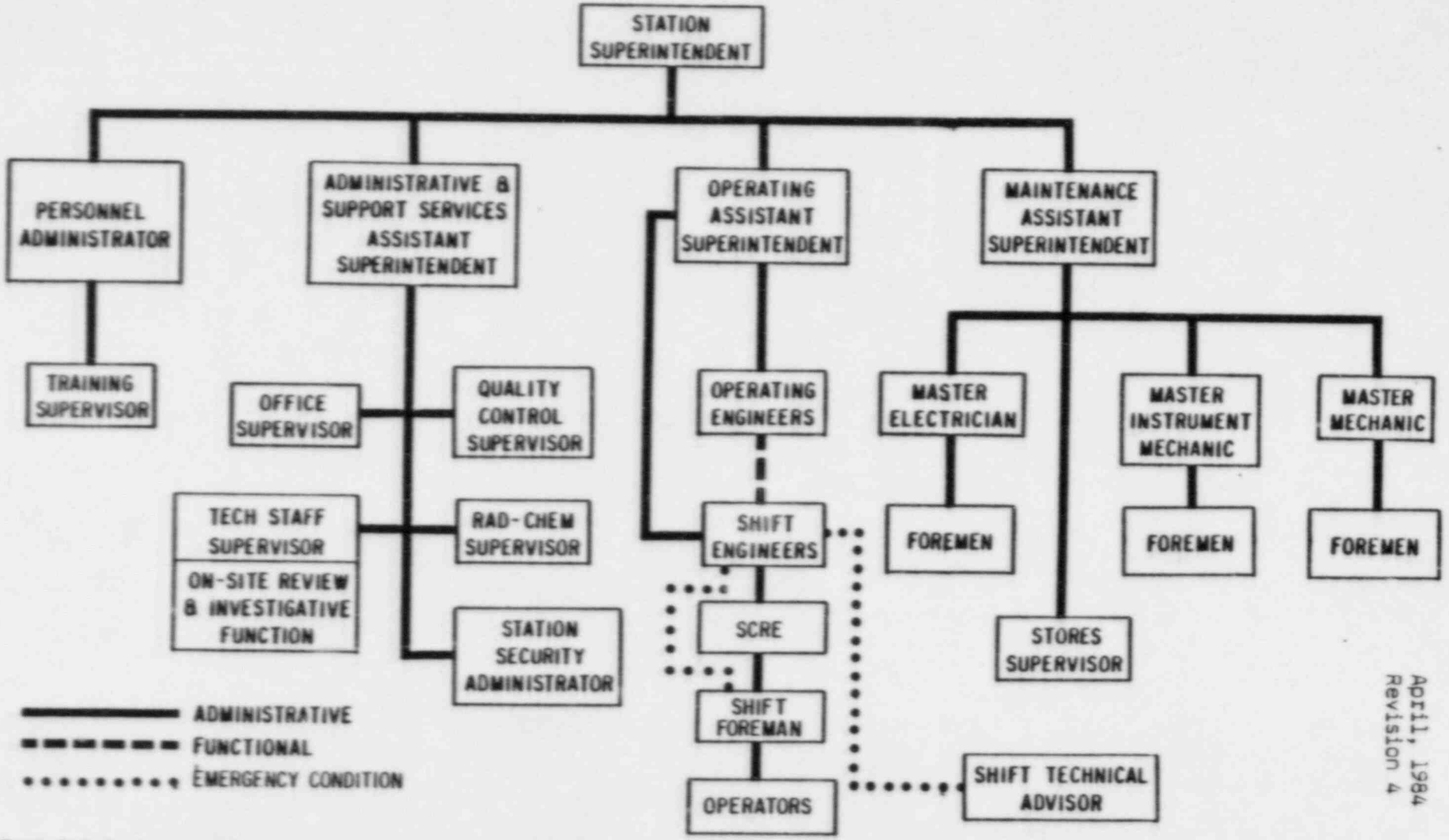
4.1.5 Minimum Shift Manning

All Commonwealth nuclear stations have the capability at all times to perform detection, classification, and notification functions required in the early phases of an emergency. Minimum shift manning at each nuclear generating station is specified in Figure 4.2-2. and in accordance with each station's Technical Specification.

4.1.6 Health Physics Organization

The Station Rad/Chem Supervisor is responsible for the health physics program and for handling and monitoring of radioactive materials. Included in this organization are health physicists, chemists, foremen, and technicians.

FIGURE 4.1-1
NORMAL NUCLEAR PLANT ORGANIZATION



THIS TABLE IS DERIVED FROM INFORMATION CONTAINED IN THE COMMONWEALTH EDISON COMPANY QUALITY ASSURANCE MANUAL. ANY CHANGES IN THAT MANUAL WILL SUPERSEDE INFORMATION CONTAINED IN THIS GSEP.

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4.2 Station Group

The GSEP Station Group is the onsite emergency organization which is activated during an emergency. The Station Group functions under a Station Director responsible for carrying out all onsite emergency efforts as well as for carrying out the Commonwealth initial offsite environs monitoring efforts which are necessary for assessing plant releases. A diagram of the GSEP Station Group organization is shown in Figure 4.2-1.

The Shift Engineer, as initial Station Director, will take immediate action during an emergency and will activate the GSEP Station Group as appropriate. In the Shift Engineer's absence or incapacitation, the line of succession is:

1) Shift Foreman;

2) Station Control Room Engineer;

3) Nuclear Station Operator. (Senior experience personnel)

The Shift Engineer, or his alternate, may be relieved of the Station Director position of responsibility when it is assumed by the designated Station Director or the Station Director's alternate.

An individual assigned the duty as a Station Control Room Engineer (SCRE) shall be available to the Control Room at all times, unless relieved by responsible individuals. It is the responsibility of the SCRE/STA to diagnose off-normal events and advise the operating shift accordingly.

NUREG-0654 Criterion II.B.5 states that the "licensee must be able to augment on-shift capabilities within a short period after declaration of an emergency." It further defines that short period as 30 and 60 minutes. Commonwealth Edison corporate management, including the NRC as stated in the October 26, 1981 letter of W. J. Dircks, NRC Executive Director for Operations to Dr. D. F. Knuth, President of KMC, Inc., agrees that the time frames for rapid augmentation of a nuclear power plant staff in the event of an emergency are not rigid inviolate requirements but rather goals. It is Commonwealth Edison's intent to expend its best efforts to meet the augmentation criteria (goals) regarding manning station facilities with sufficient skilled individuals capable of handling an emergency. Both the NRC and Commonwealth Edison realize that due to diversity of normal residential patterns for the stations' staff, possible adverse weather conditions, and road congestion, these time frames might be exceeded.

Commonwealth Edison has established a 24-Hour duty-call individual at each station entitled "the Station Duty Officer" who will be notified first after the Shift Engineer has declared a GSEP emergency. This Station Duty Officer will initiate a prioritized notification (call-list) procedure. The procedure identifies individuals who are capable of fulfilling the specific response functions which are listed in GSEP Figure 4.2-3, "Guidance for Augmentation of the Onsite Emergency Organization Within 60 Minutes". GSEP Figure 4.2-3 was developed based on the functions listed in Table B-1 of NUREG-0654. The call-list procedures are prioritized considering least travel time of station staff.

All GSEP Station Group personnel shall have the authority to perform assigned duties in a manner consistent with the objectives of this plan. The major responsibilities and duties of the Station Group directors are given in the following tables:

1) Table 4.2.1 - Station Director (Plant Operations Manager)*

2) Table 4.2-2 - Operations Director;

3) Table 4.2-3 - Technical Director;

4) Table 4.2-4 - Maintenance Director;

5) Table 4.2-5 - Stores Director;

6) Table 4.2-6 - Administrative Director;

7) Table 4.2-7 - Security Director;

8) Table 4.2-8 - Rad/Chem Director;

9) Table 4.2-9 - Operational Support Center Director.

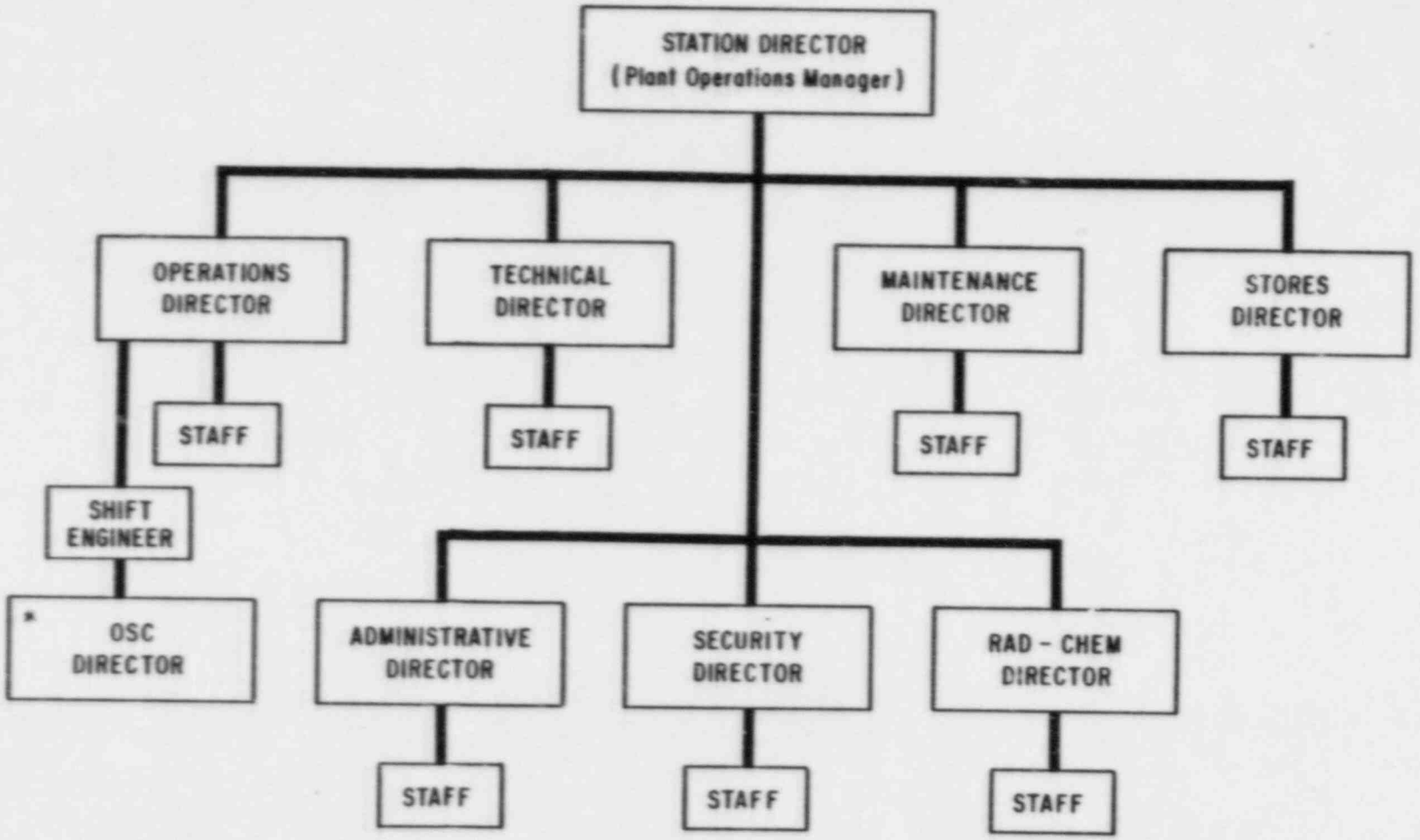
10) Table 4.2-10 - Shift Engineer

In addition to the onsite emergency organization (Station Group), the station's resources are augmented by the offsite GSEP organization and non-Commonwealth support groups.

* The designation is to be consistent with INPO guidelines, however this "Plant Operations Manager" title will not be used within the GSEP.

FIGURE 4.2-1

GSEP STATION GROUP ORGANIZATION



*OSC Director reports to Operations Support Center

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FIGURE 4.2-2
MINIMUM SHIFT MANNING REQUIREMENTS
FOR NUCLEAR POWER PLANT EMERGENCIES

	Number of Units Operating (e) (f) (Single Control Room)	
	One	Two
Shift Engineer	1 (f)	1 (f)
Shift Foreman (c)	1 (f)	1 (f)
Nuclear Station Operator	2 (f)	3 (f)
Equipment Operator/Attendant (c)	3 (f)	4 (f)
Rad/Chem Technicians	2 (f)	2 (f)
Shift Technical Advisor (d)	1 (f)	1 (f)
Radwaste Operators (c)	1 (b) (f)	1 (b) (f)
Emergency Coordinator/ Station Director	1 (b) (f)	1 (b) (f)
Notification/Communication	1 (b)	1 (b)
Rescue Operations/First Aid	2 (b)	2 (b)
TOTAL	10 (f) (g)	12 (f) (g)
Minimum (a)	9 (f) (g)	11 (f) (g)

Notes:

(a) The minimum number refers only to the case of shift shortage caused by a sudden sickness or home emergency.
(b) May be provided by shift personnel assigned other functions.
(c) These personnel are capable of performing emergency electrical, instrument or mechanical corrective actions and temporary repairs.
(d) STA function is accomplished at each generating station by the Station Control Room Engineer (SCRE) who performs line duties during normal operation, but assumes an STA advisory position during an emergency.
(e) Manning requirements do not consider Dresden Unit #1 which is in an extended outage and whose return to service date is indefinite.
(f) Each station Technical Specifications govern the number of persons in these positions if greater than the specified number.
(g) The totals do not include positions affected by footnote (b).

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FIGURE 4.2-3

GUIDANCE FOR AUGMENTATION OF THE ONSITE EMERGENCY ORGANIZATION WITHIN 60 MINUTES

	Augmentation Within 60 Minutes		
Functional Area	Unusual Event	Alert	Site & General Emergency
1. Command & Control	Notification Only		
Station Director	1	1	1
Oper. Director	1	1	1
Maint. Director	*1	1	1
Tech Director	*1	1	1
Admin. Director	*1	*1	1
Stores Director	*1	*1	1
Rad-Chem Director	*1	1	1
Security Director	*1	*1	1
OSC Director	*1	1	1
Environs Director	*1	1	1
2. Notifications & Communications		1	1
Accident Assessment			
Offsite		*2	4
Onsite		*1	1
In-Plant		*1	1
Rad/Chem (Lab)		*1	1
4. Technical Support			
Nuclear (Core)		*1	1
Electrical		*1	1
Mechanical		*1	1
5. Repair & Correction			
Mechanical		*1	1
Electrical		*1	1
Radwaste		*1	1
Inst. & Control		*1	1
6. Protective Actions			
Radiation Protection		*2	4
	*2-10	*8-25	29

*As needed depending upon the nature of the emergency

NOTE: Additional support in the areas of Command & Control; Communications; and Accident Assessment will be available from the offsite GSEP organization. It is reasonable to expect partial manning of the CCC or EOF within 60 minutes for the Site & General Emergencies.

TABLE 4.2-1

STATION DIRECTOR

The Station Director reports to the Corporate Command Center Director. He supervises and directs the GSEP Station Group in organizing and coordinating onsite emergency efforts (as well as directing all other plant activities). If the Recovery Group is activated at the EOF, the Station Director; will report to the Recovery Manager at the EOF but will not relocate from the TSC to the EOF.

The Station Director is responsible for performing the following functions:

- o Classify emergencies in accordance with Section 5.0 of this plan.
- o Ensure that notifications are made as outlined in Section 6.0. (System Power Dispatcher, NRC, and State/local agencies in a General Emergency).
- o Activate the GSEP Station Group as outlined by Figure 4.2-3 of this plan.
- o Notify local support agencies, including ambulance service, as required in order to expedite their response to the emergency.
- o Provide for an assembly and evacuation of nonessential personnel from the site for a Site and General Emergency, or when other conditions warrant (refer to Section 6.4).
- o Keep the CCC Director, Recovery Manager, and Nuclear Regulatory Commission informed as to the status of the plant as determined by the station staff.
- o Request from the offsite GSEP organization, additional material, manpower, and equipment as necessary to perform decontamination, repair, and restoration work.
- o Ensure adequate manning and access control of the TSC when activated.
- o Implement emergency and recovery efforts as directed by the Corporate Command Center Director/Recovery Manager.
- o If the emergency involves a hazardous substance and/or oil discharges (per the Spill Prevention Control Countermeasure Plan), ensure that the appropriate notifications and responses have been made (Additional information is given in Section 9.3).
- o Maintain a record of the GSEP related activities.

TABLE 4.2-2

OPERATIONS DIRECTOR

The Operations Director determines the extent of station emergencies, initiates corrective actions, and implements protective actions for onsite personnel. Specifically, the Operations Director shall:

- Verify that the System Power Dispatcher and the Station Superintendent have been notified of an emergency.
- Direct a staff in determining the nature and extent of emergencies pertaining to equipment and plant facilities.
- Initiate immediate corrective actions to limit or contain the emergency.
- Direct switching and valving operations, equipment operations, equipment checking, and miscellaneous operations as required.
- Implement protective actions for onsite personnel, to include site assembly and evacuation (when ordered by the Station Director).
- Organize and direct rescue operations of injured personnel. Verify that ambulance services have been notified, as required. Coordinate the transfer of injured personnel offsite.
- Ensure adequate manning of the OSC if not already occupied and Control Room. Designate an individual as the OSC Director and have the individual report to the Shift Engineer.
- Identify steps or procedures that the Operations staff should be utilizing to properly respond to the GSEP condition.
- Maintain a record of the GSEP related activities.

TABLE 4.2-3

TECHNICAL DIRECTOR

The Technical Director directs a staff in performing technical assesments of station emergencies and assists in recovery planning. Specifically, the Technical Director shall:

- Accumulate, tabulate, and evaluate data on plant conditions such as plant operating data and inspection reports.
- Evaluate vital plant parameters during an emergency to determine the overall condition of safety related systems, the core, and fission product barriers.
- Identify critical data points and control parameters that the Operations staff should monitor.
- Identify special procedures needed to effect recovery.
- Supervise the total onsite technical staff effort. Acquire sufficient technical personnel to provide assistance during the stabilization and restoration phases.
- Assist the Rad/Chem Director for onsite radiological/technical matters.
- Maintain a record of the GSEP related activities.

TABLE 4.2-4

MAINTENANCE DIRECTOR

The Maintenance Director directs a staff in providing labor, tools, protective equipment, and parts needed for emergency repair, damage control, and recovery efforts to return the plant to its pre-accident status. Specifically, the Maintenance Director shall:

- Direct the total onsite maintenance and equipment restoration effort.
- Request additional equipment through the GSEP organization in order to expedite recovery and restoration. Equipment such as trucks, cranes, or pumps may be required.
- Assist in rescue operations by providing labor, tools, and equipment.
- Identify required steps or procedures that need to be written or implemented in support of recovery efforts.
- Maintain a record of the GSEP related activities.

TABLE 4.2-5

STORES DIRECTOR

The Stores Director directs a staff in obtaining and delivering all parts, protective equipment, and materials needed in recovery operations. Specifically, the Stores Director shall:

- Identify what materials and supplies are available onsite and time frames for delivery of other materials and supplies from offsite.
- Expedite delivery of needed materials from offsite.
- Inventory required emergency materials so that necessary supplies are not depleted and uninterrupted work can continue.
- Provide adequate respiratory equipment and protective clothing to emergency personnel.
- Maintain a record of the GSEP related activities.

TABLE 4.2-6

ADMINISTRATIVE DIRECTOR

The Administrative Director provides administrative services in support of emergency/recovery operations. Specifically, the Administrative Director shall:

- o Direct a staff in preparation of emergency procedures and interim reports during an emergency.
- o Coordinate recordkeeping efforts at the Station.
- o Assist the Station Director in arranging for shift reliefs and continual manning of the station.
- o Arrange for food and sleeping facilities for onsite emergency workers.
- o Arrange for clerical staff at the EOF.
- o Maintain a record of the GSEP related activities.

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TABLE 4.2-7

SECURITY DIRECTOR

The Security Director maintains plant security and personnel accountability at the nuclear station. Specifically, the Security Director shall:

- Maintain plant security and account for all personnel within the protected area. In the event of an onsite assembly of all personnel, Security Director shall account for all individuals within the protected area at the time that the assembly was announced and should be able to ascertain the names of missing individuals within 30 minutes.

- Identify to the Station Director any non-routine security procedures and/or contingencies that are in effect or that require a response.

- Coordinate with Rad/Chem Director in controlling ingress and egress to and from the protected area if radiological concerns are present.

- Initiate security at the EOF if it is requested by the Corporate Command Center Director or the Station Director. It shall be the responsibility of the Security Director to implement Commonwealth Edison Corporate Nuclear Security Administrator's Call Out list when the Security Director determines the potential for EOF activation. This list identifies the Access Control Director for the EOF.

- Maintain a record of the GSEP related activities.

TABLE 4.2-8

RAD/CHEM DIRECTOR

The Rad/Chem Director directs a staff in determining the extent and nature of radiological or hazardous material problems onsite (and initially offsite). Specifically, the Rad/Chem Director shall:

- o Accumulate, tabulate, and evaluate data on plant conditions such as meteorological and radiological monitoring readings, hazardous material surveys, and other pertinent data.
- o Ensure use of protective clothing, respiratory protection, and access control within the plant as deemed appropriate to control personnel exposures.
- o Ensure that appropriate bioassay procedures have been implemented for onsite personnel when a radioactivity incident has occurred.
- o Ensure that personnel are decontaminated, if necessary.
- o Assist in planning rescue operations and provide monitoring services as required for hazardous material accidents.
- o Set up, as appropriate, a group qualified to receive contaminated and injured personnel and perform first aid duties.
- o Assist in the transfer of injured and non-essential personnel.
- o Decide which of the predetermined personnel evacuation routes is to be used when deemed necessary.
- o Request through the offsite GSEP organization the following as necessary:
  - -- Additional or special personnel monitoring devices (TLDs, whole body counters, etc.)
  - -- Engineering evaluations of temporary shielding or special equipment and tools.
  - -- Additional health physics support personnel.
  - -- Additional instrumentation and equipment, as required.
- o Coordinate initial offsite monitoring efforts until such activities can be directed by a designated Environs Director.
- o Maintain a record of the GSEP related activities.

TABLE 4.2-9

OPERATIONAL SUPPORT CENTER DIRECTOR

Upon activation of the station's Operational Support Center (OSC) the Operations Director shall designate an individual to become the OSC Director if not already designated by the Shift Engineer. The OSC Director is located in the OSC to manage and supervise the activities of personnel reporting to the OSC as directed by the Shift Engineer.

Personnel who may report to the OSC include but are not limited to:

- Operating personnel not assigned to the Control Room;
- Radwaste personnel.
- Rad/Chem Technicians.
- Maintenance personnel.

Specifically the OSC Director shall:

- Receive messages from the Shift Engineer or Operations Director.
- Assign tasks to individuals in the OSC with approval of the Shift Engineer.
- Maintain OSC resources including manpower, material, and equipment.
- Maintain accumulated exposure records for personnel working from the OSC and report these values to the Rad/Chem Director after each shift.
- Maintain records of GSEP related activites.

TABLE 4.2-10

SHIFT ENGINEER

- The Shift Engineer acts as Station Director and shall perform the duties as specified in Table 4.2-1.
- The Shift Engineer after being properly relieved by the Station Director shall report to the Operations Director and shall perform such duties as those described in Section 4.1.3 and such actions as necessary to mitigate emergency conditions.

4.3 Offsite GSEP Organization

The size of the offsite GSEP organization will vary depending upon the nature and extent of the emergency. For planning purposes, two separate organizational arrangements will be defined.

For activation of the EOF, Commonwealth Edison has developed a prioritized Nuclear Duty Officer/Recovery Manager notification list. This call list shall enable the responsible corporate Nuclear Duty Officer to notify a Recovery Manager who would require the least travel time to a particular EOF. Consistent with the onsite augmentation goal, the EOF shall be activated as promptly as possible when necessary.

Once the Emergency Operations Facility is activated, all Commonwealth recovery efforts shall be directed, coordinated, and controlled from that location. There shall be three major emergency control functions (centers) at the EOF. They are: (1) the Recovery Center, (2) the Environmental Control Center; and (3) the Emergency News Center. Refer to Section 7.1.5 for a description of these centers.

4.3.1 Offsite GSEP Organization for Emergencies of Limited Extent

During a Transportation Accident or during incidents at nuclear stations that are classified as Unusual Events or Alerts, it is unlikely that the Emergency Operations Facility would be activated. In these instances, the Corporate Command Center may be activated. Corporate Command Center personnel are indicated on Figure 4.3-1. The Corporate Command Center Director will activate only those directors and personnel deemed appropriate.

1) Table 4.3-11 Corporate Command Center Director

2) Table 4.3-12 System Power Dispatcher

3) Table 4.3-13 Medical Director

4) Table 4.3-14 Legal Consultant

5) Table 4.3-15 Engineering Director

6) Table 4.3-16 Intelligence Director

7) Table 4.3-17 Health Physics Director

8) Table 4.3-18 Information Director

9) Table 4.3-19 Environmental Director

10) Table 4.3-20 Manpower and Logistics Director

11) Table 4.3-21 Accounting Director

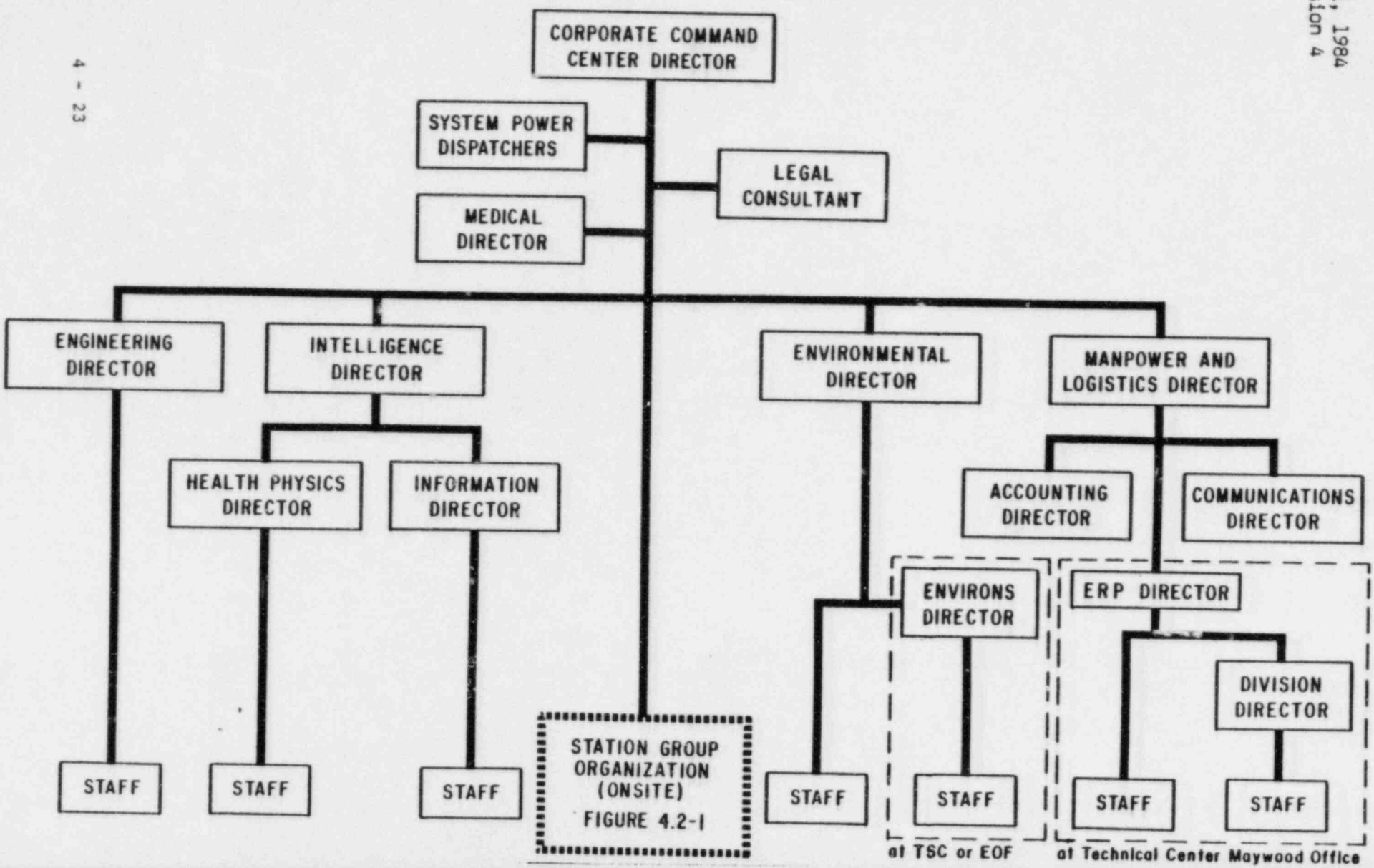
12) Table 4.3-22 Communications Director

13) Table 4.3-23 ERP Director

14) Table 4.3-24 Division Director

15) Table 4.3-25 Environs Director

FIGURE 4.3-1
LIMITED RESPONSE OFFSITE GSEP ORGANIZATION



4.3.2 Offsite GSEP Organization for Emergencies of Great Extent

During incidents at nuclear stations that are classified as Site or General Emergencies, the GSEP Recovery Group will be activated at the Emergency Operations Facility. In many instances, activation of the Recovery Group requires that designated directors of the Corporate Command Center staff relocate to the EOF and assume additional responsibilities for assigned positions. The Recovery Group functions under a Recovery Manager who is responsible for the overall company activities aimed at restoring the affected station to a safe status. The Corporate Command Center staff provides support to the Recovery Group under this organizational arrangement. The offsite GSEP organization for serious emergencies (e.g., Site and General Emergency) is depicted in Figure 4.3-2. This organization consists of the following directors whose major duties are delineated in the referenced tables:

1) Table 4.3-1 Recovery Manager
2) Table 4.3-2 Station Director (Plant Operations Manager)*
3) Table 4.3-3 Advisory Support Director
4) Table 4.3-4 Technical Support Manager
5) Table 4.3-5 Environmental/Emergency Coordinator
6) Table 4.3-6 Design & Construction Support Manager
7) Table 4.3-7 Scheduling Planning Manager
8) Table 4.3-8 Waste Systems/Radiation Control Manager
9) Table 4.3-9 Administration/Logistics Manager
10) Table 4.3-10 Emergency News Center Director
11) Table 4.3-11 Corporate Command Center Director
12) Table 4.3-12 System Power Dispatcher
13) Table 4.3-13 Medical Director
14) Table 4.3-14 Legal Consultant
15) Table 4.3-15 Engineering Director
16) Table 4.3-16 Intelligence Director
17) Table 4.3-17 Health Physics Director

*The designation is to be consistent with INPO guidelines; however, this "Plant Operations Manager" title will not be used within the GSEP.

18) Table 4.3-18 Information Director

19) Table 4.3-19 Environmental Director

20) Table 4.3-20 Manpower and Logistics Director

21) Table 4.3-21 Accounting Director

22) Table 4.3-22 Communications Director

23) Table 4.3-23 ERP Director

24) Table 4.3-24 Division Director

25) Table 4.3-25 Environs Director

26) Table 4.3-26 Training Director

27) Table 4.3-27 Waste Systems Director

28) Table 4.3-28 Access Control Director

FIGURE 4.3-2 FULL RESPONSE OFFSITE GSEP ORGANIZATION

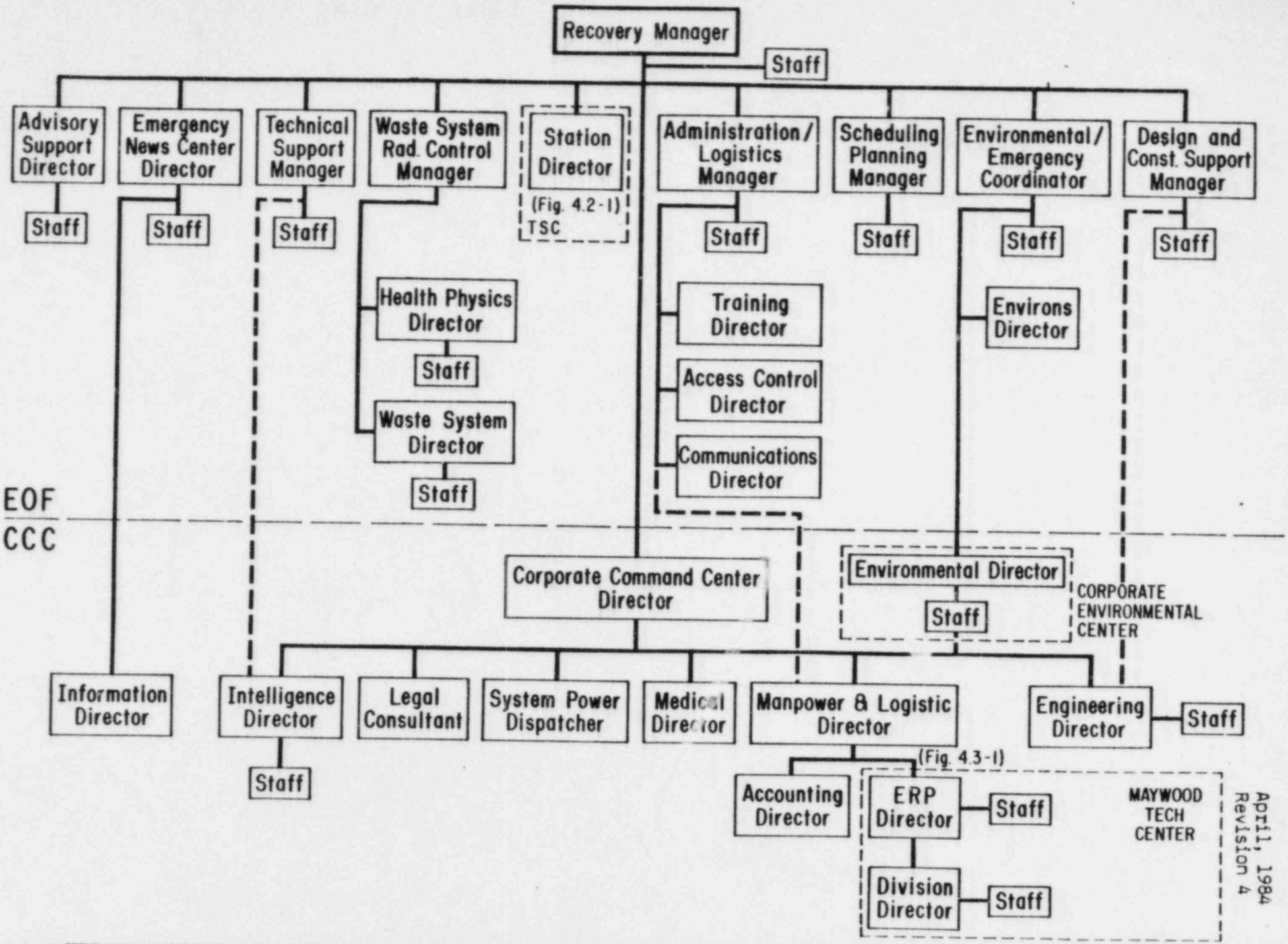


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TABLE 4.3-1

RECOVERY MANAGER

The Recovery Manager is the designated individual from Commonwealth Edison who has authority, management ability, and technical knowledge to manage the overall nuclear plant recovery operations whenever the Recovery Group is activated at the EOF Recovery Center. The primary individual designated as the Recovery Manager is the Division Vice-President and General Manager, Nuclear Stations.

Specifically, the Recovery Manager shall:

- Direct the Recovery Group and coordinate all company and industry support activities in coping with an emergency.
- Ensure notification of Federal, State, and appropriate local agencies of emergency declarations or re-classifications in accordance with Section 6.0 of this plan.
- Ensure that Federal, State, and local authorities remain cognizant of the status of the emergency situation. If requested, dispatch informed individuals to State governmental emergency operations centers.
- Review for factual content all information intended for conveyance to the news media by the Emergency News Center Director or his desigree.
- Ensure that appropriate measures are promptly taken onsite to:
  - -- Terminate the condition causing the emergency.
  - -- Protect employees and the public.
  - -- Minimize damage to the plant.
  - -- Effect post-accident recovery and deactivate the GSEP organization when appropriate.
- Request assistance from outside emergency response organizations, such as the Department of Energy Chicago Operations Office, if required.
- Determine after consultation with appropriate GSEP personnel when to evacuate the EOF and to determine who are ESSENTIAL and NON-ESSENTIAL personnel. He also determines where the evacuated personnel are to be reassembled.
- Maintain a record of the GSEP related activities.

TABLE 4.3-2

STATION DIRECTOR

The Station Director is the designated individual from Commonwealth who has the requisite authority, plant operating experience, and qualifications to implement in-plant recovery operations. The Station Director will normally not relocate to the EOF, but should remain at the TSC.

Responsibilities assigned to the Station Director are to:

- Supervise the onsite operations support staff and the onsite Station Group organization.
- Implement plans and schedules to meet recovery operations objectives.
- Provide training of personnel for off-normal instructions, plans, and procedures.
- Provide information and recommendations to the Recovery Manager.
- Determine if the OSC is to remain activated.
- Maintain a record of the GSEP related activities.

TABLE 4.3-3
ADVISORY SUPPORT DIRECTOR

The Advisory Support Director is the designated individual from Commonwealth who will coordinate the efforts of an advisory support group composed of the NSSS supplier, the NRC, authoritative consultants and a public information expert who have requisite authority to commit resources and resolve technical issues for their respective organizations. This director located at the EOF reports directly to the Recovery Manager.

Responsibilities assigned to the Advisory Support Director are to:

- Establish contact and maintain communications with appropriate non-Commonwealth Edison technical personnel whose assistance may be required to terminate the emergency conditions and to expedite the recovery.

- Establish an advisory support panel composed of representatives from organizations such as the NSSS Supplier, the NRC, authoritative consultants, and public information experts, to analyze the emergency and make recommendations to be considered by the Recovery Manager.

- Maintain a record of the GSEP related activities.

TABLE 4.3-4

TECHNICAL SUPPORT MANAGER

The Technical Support Manager is the designated individual from Commonwealth who has requisite authority, nuclear experience, and technical expertise to manage a technical staff in support of nuclear power plant recovery operations.

The Technical Support Manager who reports directly to the Recovery Manager shall:

- Develop plans and procedures in direct support of plant operations personnel with the objective of taking the plant to and maintaining a safe shutdown condition.
- Provide a central facility for collection, retention, retrieval, and transmission of plant and local environmental parameters.
- Provide experienced licensed personnel for direct support of plant shift operations personnel.
- Analyze conditions, develop guidance and out-of-normal operating and emergency procedures for direct support of plant shift operations personnel.
- Analyze instrumentation and control problems, develop emergency procedures or alternate control schemes, and design and coordinate the installation of short-term modifications.
- Direct a staff of personnel having technical expertise and formal education in transient analysis and system interactions, nuclear engineering and fuel management, core physics, electrical engineering, process computers, instrumentation and control systems, refueling operations, engineering mechanics, thermal hydraulics, plant structural and containment design, and metallurgy. Some of this expertise may have to be provided by non-Commonwealth personnel.
- Coordinate and assist the activities of the Intelligence Director located at the CCC. The Technical Support Manager has functional control of the Intelligence Director, while the CCC Director has line control.
- Maintain a record of the GSEP related activities.

TABLE 4.3-5

ENVIRONMENTAL/EMERGENCY COORDINATOR

The Environmental/Emergency Coordinator is the designated individual from Commonwealth who is specifically qualified in the coordination and management of radiological consequence assessment and who is authorized to interact with supporting agencies. This individual will supervise the Environmental Control Center at the EOF and will serve as the official contact with State and Federal radiological assessment personnel.

Responsibilities assigned to the Environmental/Emergency Coordinator who reports to the EOF Recovery Manager are to:

- Establish communications with the Corporate Environmental Center, the TSC, and/or the EOF Recovery Center and obtain information on the accident conditions, meteorological conditions, and estimates of radioactive material releases.

- Establish communication with offsite authorities and relay information necessary for the respective authorities to implement their emergency plans.

- Direct the activities of the Environs Director and the environmental staff. Coordinate the activities of environmental contractors.

- Interpret radiological data and based upon calculated dose projections, make recommendations for protective actions offsite consistent with Tables 6.3-1, 6.3-2, and 6.3-3 of this plan.

- When the EOF is activated direct the activities of the Environmental Director located at the CCC.

- Maintain a record of the GSEP related actitivies.

TABLE 4.3-6

DESIGN AND CONSTRUCTION SUPPORT MANAGER

The Design and Construction Support Manager is the designated individual from Commonwealth who has the requisite authority to interface with the A/E, NSSS supplier, and the construction forces on design or construction modifications required for recovery activities.

Responsibilities assigned to the Design and Construction Support Manager who reports to the EOF Recovery Manager are to:

- Provide for direct contact between Commonwealth, the A/E, NSSS supplier, and the construction representatives on administrative matters.
- Anticipate the need for and supply engineering and technical specialists to the GSEP organization.
- Direct, coordinate, and approve other engineering, design, and construction activities onsite.
- Establish which if any engineering, design, and construction activities shall be required to be controlled by the Quality Assurance Program.
- Functionally coordinate the activities of the Engineering Director located at the CCC.
- Maintain a record of the GSEP related activities.

TABLE 4.3-7

SCHEDULING PLANNING MANAGER

The Scheduling Planning Manager is the designated individual from Commonwealth who has the requisite authority to coordinate and expedite plans and schedules to assist the Recovery Manager in recovery operations.

Responsibilities assigned to the Scheduling Planning Manager who reports to the EOF Recovery Manager are to:

- Respond to specific directives of the Recovery Manager for the scheduling of activities.
- Take the measures necessary to identify key problems, resource limitations, and the status of scheduled milestones.
- Develop agendas for Recovery Group staff meetings and follow-up to expedite commitment compliance.
- Maintain a record of the GSEP related activities.

TABLE 4.3-8

WASTE SYSTEMS/RADIATION CONTROL MANAGER

The Waste Systems/Radiation Control Manager is the designated individual who has requisite authority, nuclear experience, and technical expertise to manage the radioactive waste and radiological control aspects of the recovery operations.

The responsibilities assigned to the Waste Systems/Radiation Control Manager who reports to the EOF Recovery Manager are to:

- Maintain an updated status report of onsite liquid, solid, and gaseous waste volumes, with particular interest given to systems or tanks that are approaching or have exceeded their rated capacities. (This includes the plant charcoal filter exhaust system.)
- Recommend sampling programs to the affected station that will allow an evaluation of radwaste system status.
- Develop plans and procedures for processing liquid, gaseous, and solid wastes with a long-term goal of reducing all waste levels to a normal pre-accident status and which maintains personnel exposures as low as reasonably achievable.
- Develop plans for modifications to plant systems that will allow large scale waste processing in a way that will keep personnel and public radiation exposures as low as possible.
- Provide information and recommendations to the Recovery Manager concerning future operations that could affect the plant, equipment, or environment.
- Direct the activities of the Health Physics Director when that individual has been relocated to the EOF.
- Directs the activities of the Waste Systems Director.
- Maintain a record of the GSEP related activities.

TABLE 4.3-9

ADMINISTRATION/LOGISTICS MANAGER

The Administration/Logistics Manager is the designated individual from Commonwealth who is responsible for providing administrative, logistic, communications, and personnel support for the recovery operations.

Responsibilities assigned to the Administration/Logistics Manager who reports to the EOF Recovery Manager are to:

- Serve as purchasing agent for the Recovery group with the responsibility for contract negotiation/administration and material control.
- Obtain the following services as appropriate:
  - -- Accommodations for lodging, trailer setups, airline and auto transportation (shuttle services).
  - -- Office support services such as typing, copying, office supplies, furniture, photography, and supply of area maps.
  - -- Food services and necessary (non-radioactive) waste disposal.
- Provide for any necessary aerial services.
- Provide any extra communication equipment.
- Provide financial and accounting service.
- Direct the activities of the Communications Director, Access Control Director, and the Training Director. Also functionally direct the activities of the Manpower and Logistics Director located at the CCC to obtain assistance in fulfilling the responsibilities listed above. The CCC Director has functional responsibility for the Manpower and Logistics Director.
- Provide a processing center for the registration of all incoming personnel; provide security to the EOF or Back-up EOF through the Access Control Director.
- Maintain a record of the GSEP related activities.

TABLE 4.3-10

EMERGENCY NEWS CENTER DIRECTOR

The Emergency News Center Director, upon activation of the Emergency News Center Group at the EOF, is responsible for all recovery-related information intended to be conveyed from CECo to the news media.

The responsibilities of the Emergency News Center Director who reports to the EOF Recovery Manager are to:

- Assure the operability of, and supervise the activities in the Joint Public Information Center (JPIC).
- Effect a smooth transition of the news media point-of-contact from CCC to JPIC, and of news information responsibilities from CCC/Information Director to EOF/ENC Director.
- Maintain the primary interface between CECo and the news media, including, as necessary, briefings, news conferences, interviews, and response to information requests.
- Keep up-to-date on conditions of the plant and environment, and actions of CECo personnel and outside agencies.
- Obtain approval of the Recovery Manager, or his designee of all information intended to be conveyed to the news media.
- Coordinate with Federal, State, and local agenies, as well as with other organizations involved in the recovery, to maintain factual consistency of information to be conveyed to the news media.
- Direct the activities of the CCC/Information Director.
- Participate, as needed, in rumor-control activities managed by State agencies.
- Maintain a record of GSEP-related activities.

TABLE 4.3-11

CORPORATE COMMAND CENTER DIRECTOR

The Corporate Command Center Director will direct company GSEP activities until such time when (and if) the Recovery Group at the EOF is activated. After the Recovery Group is activated, the CCC Director and his staff become a support group to the Recovery Manager.

Responsibilities assigned to the CCC Director (prior to activation of the Recovery Group) are to:

- Direct the GSEP organization shown in Figure 4.3-1 and coordinate all company activities involved in coping with the emergency.
- Notify appropriate Federal, State, and local agencies of emergency conditions in accordance with Section 6.0 of this plan.
- Notify American Nuclear Insurers of any emergency classification and Transportation Accident.
- Ensure that appropriate measures are promptly taken onsite to:
  - -- Terminate the condition causing the emergency.
  - -- Protect employees and the public.
  - -- Minimize the damage to the plant.
  - -- Effect post-accident recovery and deactivate the GSEP organization.
- Approve the factual content of CECo press releases to the public.
- Request assistance from outside emergency response organizations, such as INPO and the Department of Energy Chicago Operations Office, if required.
- Maintain a record of the GSEP related activities.
- Activate the Recovery Group if the emergency escalates to a Site or General Emergency or if otherwise deemed appropriate.

Following Recovery Group activation at the EOF:

- Remain at the CCC and provide assistance to the Recovery Manager, as requested.
- Direct the CCC organization shown in Figure 4.3-2.
- Maintain a record of the GSEP related activities.

TABLE 4.3-12

SYSTEM POWER DISPATCHER

The System Power Dispatcher is the designated individual located at the System Power Supply Office (SPSO) who is responsible for performing normal duties and providing notification to the Nuclear Duty Officer, as outlined in Section 6.0.

Responsibilities assigned to the System Power Dispatcher who reports to the CCC Director are to:

- Notify the Nuclear Duty Officer in the event of a Transportation Accident, an Unusual Event, an Alert, a Site Emergency, a General Emergency, or a loss of communications with a nuclear station as reported from the nuclear station.

- In the event of an Unusual Event, Alert or Site Emergency and if the Nuclear Duty Officer cannot be contacted within five minutes, immediately notify the Illinois ESDA, Illinois Department of Nuclear Safety and appropriate contiguous State authorities of the emergency situation.

- Maintain a record of the GSEP related activities.

TABLE 4.3-13

MEDICAL DIRECTOR

The Medical Director is the company physician or other medically qualified individual who is responsible for providing recommendations to the Corporate Command Center Director (both prior to and during the Recovery phase) for medical treatment and for specifying medical supplies necessary for decontamination treatment and general first aid.

Responsibilities assigned to the Medical Director who reports to the CCC Director are to:

- Ensure that arrangements with appropriate hospitals have been made for the emergency care and admission of patients involved in hazardous materials/radiation incidents.
- Recommend first aid and decontamination techniques for personnel requiring aid in the emergency area.
- Coordinate the activities of contracted radiological medical assistance personnel.
- Analyze all available health information data pertaining to persons who have received injuries or excessive exposure to hazardous materials, including radioactivity.
- Ensure that procedures governing the use of thyroid blocking agents have been followed by Commonwealth emergency personnel.
- Consult with the Corporate Command Center Director regarding measures to protect onsite personnel and the offsite public.
- Maintain a record of the GSEP related activities.

TABLE 4.3-14

LEGAL CONSULTANT

The Legal Consultant is a representative of Commonwealth's legal staff who is responsible for providing counsel on all legal matters. Prior to and during the recovery phase of the emergency, he will report to the Corporate Command Center Director.

Responsibilities assigned to the Legal Consultant are to:

- Provide legal assistance to Commonwealth.
- Provide counsel to the CCC Director regarding Federal, State, and local regulations pertaining to emergency plans.
- Maintain a record of the GSEP related activities.

TABLE 4.3-15

ENGINEERING DIRECTOR

The Engineering Director who reports to the CCC Director at the CCC will coordinate the engineering services necessary for plant modifications, special equipment arrangement, shielding, containers, or other devices needed during the emergency. Upon activation of the EOF Recovery Group, the Engineering Director will functionally serve as a support individual for the Design and Construction Support Manager.

Responsibilities assigned to the Engineering Director (prior to Recovery Group activation) are to:

- Assist in the development of post-accident recovery measures.
- Provide technical information on the facility design.
- Ensure that modifications needed for plant recovery are implemented in a timely manner.
- Enlist the aid of consultants as necessary.
- Maintain a record of the GSEP related activities.

Following EOF Recovery Group activation, the Engineering Director shall perform activities similar to those listed above, except that they shall be done in coordination with and in support of the Design and Construction Support Manager who is located at the EOF.

TABLE 4.3-16

INTELLIGENCE DIRECTOR

The Intelligence Director will coordinate activities relating to health physics evaluations and information distribution to inform and make recommendations to the CCC Director. The Intelligence Director will serve as CCC Director in the event that the CCC Director or an alternate is not available. Upon activation of the EOF Recovery Group, he will functionally serve as a support individual for the Technical Support Manager while remaining at the CCC.

Responsibilities assigned to the Intelligence Director (prior to EOF Recovery Group activation) are to:

- o Assist the CCC Director in the evaluation of the significance of an emergency with respect to the public.
- o Direct the activities of the Health Physics Director and the Information Director when located in the CCC.
- o Review and concur with press releases proposed by the Information Director.
- o Maintain records of information obtained from the other directors within the CCC organization, including contacts with offsite agencies, contractors and other support forces.
- o Serve as the CCC Director in the event that the CCC Director or an alternate is not available.
- o Provide for access control to the CCC with designated individuals.
- o Maintain a record of the GSEP related activities.

Following EOF Recovery Group activation, the Intelligence Director shall perform functional activities at the CCC in support of the Technical Support Manager.

TABLE 4.3-17

HEALTH PHYSICS DIRECTOR

The Health Physics Director shall serve as support from the CCC to the onsite health physics activities by providing additional instrumentation or personnel as necessary, under the direction of the Intelligence Director. He shall make recommendations on dose management techniques for both onsite and offsite activities for maintaining personnel exposures as low as reasonably achievable. Upon activation of the EOF Recovery Group, he shall serve as a support individual for the Waste Systems/Radiation Control Manager at the EOF.

Responsibilities assigned to the Health Physics Director (prior to Recovery Group activation) are to:

- Determine the need for additional radiological support personnel.
- Determine the need for additional health physics instrumentation, dosimetry, and protective equipment.
- Review plant health physics information and make recommendations to the Intelligence Director. To the extent possible, make recommendations that will ensure that emergency and recovery operations are performed in accordance with Commonwealth radiation protection standards. Especially during reentry situations, normal 10 CFR 20 exposure limits are not to be exceeded, and in all situations personnel exposures should be maintained as low as reasonably achievable.
- Assist the affected station in the development of plans for plant surveys, sampling, shielding, and special tools in support of waste systems processing and design modification activities.
- Keep informed of the activities of offsite environmental monitoring teams. Make recommendations that will assist those teams maintain their exposures as low as reasonably achievable.
- Maintain a record of the GSEP related activities.

Following an EOF Recovery Group activation, the Health Physics Director shall perform activities similar to those listed above, except that they shall be done at the EOF in coordination with and in support of the Waste Systems/Radiation Control Manager. The Health Physics Director shall also provide for the radiation protection of personnel at the EOF.

TABLE 4.3-18

INFORMATION DIRECTOR

The Information Director is responsible for collecting, verifying, and disseminating information on emergency situations to the public via the news media, under the direction of the Intelligence Director. Upon the activation of the Recovery Group, the Information Director shall report to the Emergency News Center Director.

Responsibilities assigned to the Information Director (prior to Recovery Group activation) are to:

- Obtain information. Through GSEP personnel, determine the nature of the emergency and its effect on the public and other company operations.

- Release information. Take steps to release accurate information as soon as possible. Coordinate the release of information with other involved agencies and companies. The news media seeking interviews and comments from Commonwealth officials should be given full cooperation.

- Distribute internal information. Information should be promptly disseminated to Commonwealth employees as soon as possible through appropriate communications channels.

- Maintain a record of the GSEP related activities.

Following an EOF Recovery Group activation, the Information Director becomes a support individual to the Emergency News Center Director and shall release information only when directed by the Emergency News Center Director. The Information Director is to maintain his office in either the CCC or other appropriate CECo locations.

TABLE 4.3-19

ENVIRONMENTAL DIRECTOR

The Environmental Director is responsible for initially coordinating all offsite sampling/monitoring activities of Commonwealth personnel and for interfacing with State personnel regarding dose assessment programs. Upon activation of the EOF Recovery Group, he shall serve as a support individual for the Environmental/Emergency Coordinator at the EOF.

Responsibilities assigned to the Environmental Director (prior to Recovery Group activation) are to:

- Direct the environmental sampling activities of the Environs Director.
- Coordinate the environmental contractor's assistance in the collection of environmental data.
- Cooperate with the Illinois Department of Nuclear Safety (and contiguous State agencies) in the implementation of an offsite dose assessment program.
- Based on environmental sampling or known plant releases, calculate projected dose values for affected areas; based on these projections, advise the CCC Director of protective action recommendations for plant personnel and members of the public. These recommendations should be consistent with Tables 6.3-1, 6.3-2, and 6.3-3 of this plan.
- Maintain a record of the GSEP related activities.

Following a Recovery Group activation:

- Obtain information and perform activities at the Corporate Environmental Center at the direction of the Environmental/ Emergency Coordinator.

TABLE 4.3-20

MANPOWER/LOGISTICS DIRECTOR

The Manpower/Logistics Director is responsible for directing a staff of manpower, logistics, communications, aerial assistance, and accounting personnel in support of the station as required by the Corporate Command Center Director. Upon activation of the Recovery Group, he shall serve as a support individual for the Administration/Logistics Manager.

Responsibilities assigned to the Manpower/Logistics Director (prior to Recovery Group Activation) are to:

- Ensure that emergency communications equipment is kept operable during the course of the emergency.
- Provide personnel, equipment, and services as required, primarily from the appropriate Division. Services may include transportation of personnel and equipment.
- Keep the CCC Director informed of support services available to assist the station.
- Direct the activities of the Accounting Director, and the ERP Director.
- Maintain a record of the GSEP related activities.

Following a Recovery Group activation, the Manpower/Logistics Director shall perform activities at the CCC under the functional direction of the Administration/Logistics Manager who is located at the EOF.

TABLE 4.3-21

ACCOUNTING DIRECTOR

The Accounting Director is responsible for accounting and related cost monitoring practices related to the emergency. He shall remain at the CCC or other designated location throughout the emergency and recovery activities, functioning under the direction of the Manpower/Logistics Director.

Responsibilities assigned to the Accounting Director are to:

- Seek counsel of Industrial Relations, the comptroller's office, and others as required.
- Initiate use of the special GSEP function number to accrue GSEP costs.
- Make provisions to establish a proper method of accounting for costs of contractual services and other expenditures related to the emergency.
- Fulfill the clerical requirements for the other directors of the Corporate Command Center.
- Maintain a record of the GSEP related activities.

TABLE 4.3-22

COMMUNICATIONS DIRECTOR

The Communications Director is responsible for the procurement of required telephone and radio communications services and facilities as specified by the Manpower/Logistics Director and maintenance of these communications as required. Upon activation of the EOF Recovery Group, the Communications Director reports to the Administration/Logistics Manager.

Responsibilities assigned to the Communications Director are to:

- Obtain additional radio and telephone equipment as necessary to meet the needs of the emergency.
- Obtain sufficient personnel to maintain communications equipment in an operable condition.
- Maintain a record of the GSEP related activities.

TABLE 4.3-23

ERP DIRECTOR

The Corporate Command Center ERP Director, located in the CECo Technical Center Office in Maywood, Illinois, shall coordinate the activities of Division personnel and equipment. Under the direction of the Manpower/Logistics Director, he shall provide for Division support to the affected station.

Responsibilities assigned to the ERP Director are to:

- Activate the Emergency Restoration of Power Program as necessary to support the station activities.
- Inform the respective Division Director of support service required by the Station or the EOF.
- Obtain additional support from the other Division Directors, as the level of requirements increases.
- Maintain a record of the GSEP related activities.

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TABLE 4.3-24

DIVISION DIRECTOR

The Division Director shall direct the GSEP Division personnel to provide support services required by the Corporate Command Center ERP Director.

Responsibilities assigned to the Division Director(s) are to:

- Activate the Division resources for emergency support and coordinate all activities.
- Provide the required personnel, instruments, equipment, and material to the station as specified by the CCC ERP Director.
- Assist government agencies, if required, with the movement and evacuation of the public from a defined area.
- Maintain a record of the GSEP related activities.

TABLE 4.3-25

ENVIRONS DIRECTOR

The Environs Director is the member of the offsite GSEP organization who will supervise the activities of Commonwealth environmental sampling teams in an emergency. He shall carry out his activities at the direction of the Environmental Director at the CCC. Subsequent to a Recovery Group activation, he shall serve under the Environmental/Emergency Coordinator.

Responsibilities assigned to the Environs Director are to:

- Establish a headquarters at either the affected station's TSC or EOF.

- Assemble one or more environmental monitoring teams. During an actual or suspected gaseous release situation from the plant, two teams should be dispatched. If sufficient manpower is available, there should be three persons per team.

- Dispatch and coordinate the activities of Commonwealth Edison environmental monitoring teams in order to determine the extent and nature of offsite releases of radioactive or other hazardous materials. Activities of the teams may include:

  -- Dose rate surveys (including plume tracking);
  -- Air sampling;
  -- Soil, water, and vegetation sampling;
  -- Contamination surveys; and
  -- Exchange of TLDs and filter cartridges from fixed environmental stations.

- Request through the GSEP organization:

  -- Assistance for road blocks and security until State, County and Local personnel are available;
  -- Communications equipment as necessary. Telephones, mobile radios, and portable radios may be required;
  -- Required transportation for personnel; and
  -- Sufficient technical and non-technical personnel to expand the operation as necessary.

- Maintain a record of the GSEP related activities.

TABLE 4.3-26

TRAINING DIRECTOR

The Training Director shall coordinate the training of individuals needed to support recovery operations. The Training Director reports to the Administration/Logistics Manager

Responsibilities assigned to the Training Director include:

- Provide the coordination necessary to train large numbers of personnel needed to support recovery operations at an affected nuclear station.
- Ensure that training given to incoming personnel includes descriptions of the station layout, basic radiation protection, status of systems, and emergency procedures.
- Ensure that training is given on out-of-normal procedures for shift operators, maintenance, health physics, and chemistry personnel.
- Determine areas of abnormal radiation levels and provide specific instructions to personnel on how to limit exposures in such areas.
- Maintain a record of the GSEP related activities.

Table 4.3-27

WASTE SYSTEMS DIRECTOR

The Waste Systems Director who reports to the Waste Systems/Radiation Control Manager shall support the onsite radwaste activities by providing technical assistance in the form of manpower, equipment, supplies, and recommendations for both onsite and offsite activities.

Responsibilities assigned to the Waste System Director are:

- Maintain an updated status report on onsite radwaste systems regarding solid, liquid, and gaseous materials.
- Recommend sampling programs to the affected station that shall allow evaluation of radwaste system status.
- Develop plans and procedures for processing contaminated materials for both short and long term reduction programs.
- Develop plans and procedures for shipment of contaminated materials to authorized burial locations.
- Develop plans for modifications to plant systems that will allow waste processing in keeping with the "ALARA" concept.
- Provide information and recommendations to the Waste Systems/ Radiation Control Manager concerning future operations that could affect the plant, equipment, or environment.
- Direct a radwaste system operations staff.
- Maintain a record of the GSEP related activites.

TABLE 4.3-28

ACCESS CONTROL DIRECTOR

The Access Control Director reports to the Administration/Logistics Manager. Initially the Security Director working from the TSC may be the acting Access Control Director. The responsibilities of the Access Control Director are to:

- Control access to the EOF or Back-up EOF.
- Coordinate with the Administration/Logistics Manager or his designee to control ingress and egress of the EOF personnel.
- Report to the CCC Director or Station Director during early stages of EOF activation to control access until the Administration/Logistics Manager arrives at the EOF.
- Maintain a record of the GSEP related activities.

4.4 Non-Commonwealth Support Groups

Agreements are maintained with support agencies for each nuclear station. These support agencies (to be named in each site specific annex) provide services of:

1) law enforcement;

2) fire protection;

3) ambulance services;

4) medical and hospital support; and

5) radiological assistance.

Support groups providing transportation and treatment of injured station personnel are described in Section 6.5 of this plan.

Commonwealth retains contractors to provide supporting services to nuclear generating stations. Among services currently provided are the following:

*1) Teledyne Isotopes provides environmental radiological monitoring, bioassay and radiochemical analysis services. In an emergency situation, Teledyne field personnel, at a minimum, would continue to maintain Commonwealth air samplers and exchange TLDs under the supervision of either the Environmental/Emergency Coordinator or the Environs Director. The Teledyne laboratory in Northbrook, Illinois would analyze the environmental samples for their radioactivity content and report results to Commonwealth Edison.

*2) Radiation Management Corporation (RMC) provides services of medical and health physics support. RMC advises on the health physics aspects of situations requiring medical assistance, provides and maintains whole body counters at Commonwealth nuclear stations, and interprets bioassay results.

*3) Murray and Trettel, Inc. provides meteorological monitoring services, including weather forecasts. Murray and Trettel maintains all Commmonwealth nuclear station meteorological facilities. Murray and Trettel has computer capability to pool remotely the meteorological facilities to ascertain local conditions and to detect instrument failure.

*4) R. S. Landauer, Jr., Company provides personnel dosimetry services. Landauer provides film badges and TLD rings to personnel at the nuclear stations; processes the dosimetry; and

*NOTE: The specific contractors may change but the functions are maintained.

reports the results in hardcopy and computer card format. In an emergency, Landauer would provide additional dosimetry to the affected nuclear station and to the Environmental/Emergency Coordinator, and to the Health Physics Director, if needed.

*NOTE: The specific contractors may change but the functions are maintained.

4.5 Institute of Nuclear Power Operations (INPO)

Experience has shown that a utility may need resources beyond in-house capabilities for the recovery from a nuclear plant emergency. One of the roles of the Institute of Nuclear Power Operations is to assist affected utilities by quickly applying the resources of the nuclear industry to meet the needs of an emergency.

INPO has an emergency response plan that enables it to provide the following emergency support functions:

- o Assistance to the affected utility in locating sources of emergency manpower and equipment;
- o Analysis of the operational aspects of an incident;
- o The dissemination of information to member utilities concerning aspects of the incident that are applicable to their operations; and
- o Organizing the support of industry experts who could advise the utility on technical matters.

To support these functions, INPO maintains the following emergency support capabilities:

- o A dedicated emergency call number;
- o Designated INPO representative(s) who can be quickly dispatched to the utility emergency response organization to coordinate INPO support activities and information flow; and
- o The 24 hour-per-day operation of an Emergency Response Center at INPO headquarters.

Commonwealth Edison will notify INPO (via the designated emergency call number) for all situations involving an Alert, Site Emergency, or General Emergency declaration.

INPO has coordinated the preparation of a Voluntary Assistance Agreement for Transportation Accidents. Commonwealth has signed this agreement which estaolishes the rights and responsibilities of electric utilities in requesting or providing assistance for response to a nuclear materials Transportation Accident.

4.6 Participating Federal Organizations

4.6.1 Nuclear Regulatory Commission

The Nuclear Regulatory Commission (NRC) is responsible for licensing and regulating nuclear facilities and materials and for conducting research in support of the licensing and regulatory process. These responsibilities include protecting the public health and safety, protecting the environment, protecting and safeguarding materials and plants in the interest of national security and assuring conformity with anti-trust laws.

The NRC Office of Inspection and Enforcement has the responsibility for auditing of nuclear power stations, special nuclear material, source material, and byproduct material licensees. It is responsible for ensuring that such activities are conducted in accordance with the terms and conditions of such NRC licenses and that as a result of such operations, there is no undue risk to the health and safety of the public.

The NRC Office of Nuclear Reactor Regulation, established by the Energy Reorganization Act of 1974, as amended, performs licensing functions associated with the construction and operation of nuclear reactors and with the receipt, possession, ownership, and use of special nuclear and byproduct materials used at reactor facilities.

With regard to emergency preparedness, the NRC shall:

1) Assess licensee emergency plans for adequacy:

2) Review the Federal Emergency Management Agency findings and determinations on the adequacy and capability of implementation of State and local plans; and

3) Make decisions with regard to the overall state of emergency preparedness and issuance of operating licenses.

The NRC shall respond to incidents at licensed facilities or vehicular accidents involving licensed materials, including radionuclides, in transit. The NRC shall act as the lead Federal agency with regard to technical matters during a nuclear incident including radiological assistance. The NRC shall be prepared to recommend appropriate protective actions for the public and technical actions to the licensee. FEMA shall act as the lead Federal agency for offsite, non-technical concerns.

During an incident the Chairman of the Commission is the senior NRC authority for all aspects of a response. The Chairman shall transfer control of emergency response activities to the Director of Site Operations when deemed appropriate by the Chairman.

All NRC Regions as well as Headquarters are prepared to respond to potential emergencies. All Regions and Headquarters have developed plans and procedures for responding to radiological incidents involving NRC licensees. Headquarters has developed the NRC Incident Response Plans and Implementing Procedures. Each NRC Region has developed Regional Supplements that detail how the Region will fulfill all of the responsibilities assigned in the NRC Incident Response Plan. All NRC organizations are responsible for maintaining an effective state of preparedness through periodic training, drills, and exercises.

Each Region and Headquarters has established and maintains an Incident Response Center designed to centralize and coordinate the emergency response function. Adequate communications are established to link the licensee, Headquarters, and the Region. The NRC has established lines of communications with local government, State government, other Federal agencies, Congress, and the White House. Public information will be disseminated in a timely manner and periodically.

Each Region is prepared to send a team of qualified specialists to the scene expediently. All of the necessary supplies and equipment needed for emergency response will be provided and maintained by the NRC.

The NRC's Incident Response Plan objectives are to provide for protection of the public health and safety, property, and the environment, from the effects of radiological incidents which may occur at licensed facilities or which involve licensed materials, including radionuclides in transit.

The objectives of the agency plan set forth the organizational and management concepts and responsibilities needed to assure that NRC has an effective emergency response program.

The plan is intended to ensure NRC preparedness:

- To receive and evaluate notificaton information of incidents, accidents and unusual events and determine the extent of NRC response necessary to meet NRC responsibilities for mitigating the consequences of these events;

- To determine the cause of incidents, accidents, and unusual events in order to ensure that appropriate corrective actions are taken by the licensee to minimize the consequences of these events;

- To provide on-site expertise in a timely manner, to evaluate the nature and extent of the incident, ascertain plant status (for reactors and fuel facilities), monitor licensee activities, determine compliance, make recommendations, and, if necessary, issue orders relative to the event;

- To inform the public and others of plant status and technical details concerning the incident;
- To recommend adequate protective actions to the responsible local and/or State agencies;
- To provide technical assistance;
- To ensure the plant is returned to a safe condition; and
- To return the NRC Headquarters and Regional office to normal operations.

4.6.2 Federal Emergency Management Agency (FEMA)

The Federal Emergency Management Agency (FEMA) establishes policy and coordinates the civil emergency planning, management, mitigation, and assistance functions of the executive agencies of the United States. FEMA is also responsible for establishing a program of federal disaster preparedness and for providing technical assistance to states in developing comprehensive plans and practical programs for preparation against disaster.

With regard to radiological emergency preparedness, FEMA will:

1) Establish policy and provide leadership via the Federal Radiological Preparedness Coordinating Committee (FRPCC) in the coordination of all Federal assistance to State and local governments for developing, reviewing, assessing, and testing the State and local radiological emergency response plans;

2) Review and approve State and local radiological emergency response plans and preparedness in accordance with FEMA regulations;

3) Develop, with the NRC, scenarios for use by NRC licensed facility operators and State and local governments in testing and exercising radiological emergency plans; and

4) Develop, implement, and maintain a training program to support State and local radiological emergency response plans.

The role of FEMA during an emergency is that of coordinating and directing the offsite activities of all Federal agencies during a radiological accident.

4.6.3 Federal Radiological Preparedness Coordinating Committee (FRPCC)

The Federal Radiological Preparedness Coordinating Committee consists of the Federal Emergency Management Agency, which chairs the Committee, the Nuclear Regulatory Commission, the Environmental Protection Agency, the Department of Health and Human Services, the Department of Energy, the Department of Transportation, the Department of Defense, the Department of Agriculture, the Department of Commerce, and where appropriate and on an ad hoc basis, other Federal departments and agencies. The FRPCC shall assist FEMA in providing policy direction for the program of Federal assistance to State and local governments in their radiological emergency planning and preparedness activities.

4.6.4 Department of Energy Chicago Operations Office

The Department of Energy has extensive radiological monitoring equipment and personnel resources that it can assemble and dispatch to the scene of a radiological incident.

Upon request, the Department of Energy (DOE) Chicago Operations Office will provide assistance to Commonwealth Edison following a radiological incident as outlined in the Federal Radiological Monitoring and Assessment Plan (FRMAP). The objective of the DOE Chicago Operations Office would be to rapidly dispatch a team of specialists to the incident site where the team would:

1) Make needed radiological assistance available to the general public, State and local governments, and Federal agencies;

2) Provide a framework through which Federal agencies will coordinate their emergency monitoring and assessment activities in support of State and local governments radiological monitoring and assessment activities; and

3) Assist State and local governments in preparing for radiological emergencies by describing Federal radiological assistance responsibilities and capabilities.

If Commonwealth Edison deems that assistance from DOE is necessary or desirable, the Recovery Manager, the Corporate Command Center Director, or the Station Director would notify the DOE Chicago Operations Office. Assistance provided by DOE shall not abridge State or local authority.

4.6.5 The U.S. Coast Guard

The U.S. Coast Guard patrols and ensures the safety of navigable waterways in the United States. The U.S. Coast Guard shall be promptly notified of any oil or hazardous substance discharges into rivers or lakes or radioactive contamination of rivers or lakes under Coast Guard jurisdiction at levels requiring assistance to effect protective actions (Refer to Section 9.3).

The U.S. Coast Guard will be contacted by the Illinois Department of Conservation in the event of an incident at a nuclear power plant. The Coast Guard will be responsible for officially closing the waterways to all commercial traffic (Refer to the State plan).

4.6.6 U.S. Army Corps of Engineers

The U.S. Army Corps of Engineers controls barge and boat traffic at locks and dams on navigable waterways in the United States.

The Corps of Engineers will be contacted by the Illinois Department of Conservation in the event of an incident at a nuclear power plant. The Corps will be responsible for closing their locks and dams to all waterway traffic leading to the affected area, allowing only traffic leaving the area (Refer to the State Plan "The Illinois Plan for Radiological Accidents" (IPRA) Volume 1 & 2).

4.6.7 Federal Bureau of Investigation (FBI)

Support from the Federal Bureau of Investigation (FBI) is available through its statutory responsibility based in Public Law and the US code, and through a memorandum of understanding for cooperation with the Nuclear Regulatory Commission. Notification to the FBI of emergencies in which they would have an interest will be through provisions of the Nuclear Station's Security Plan, or by the NRC.

4.7 The State of Illinois

The State of Illinois has the statutory responsibility and authority for protecting the health and safety of the public in Illinois.

The State of Illinois has developed an "Illinois Plan for Radiological Accidents" (IPRA). This plan was developed in accordance with the guidance suggested by NUREG 0396 and NUREG 0654.

This section provides a summary of the essential elements of the State Plan.

The Illinois Plan for Radiological Accidents (IPRA) is based upon the implementation of five basic functions:

- Command and Coordination
- Notification and Warning
- Accident Assessment
- Protective Actions
- Parallel Actions

Figure 4.7-1 depicts the overall concept of operations for the Illinois Plan for Radiological Accidents (IPRA).

4.7.1 Governor of the State of Illinois

The Governor of the State of Illinois has overall command authority for both the radiological and nonradiological aspects of a nuclear incident. The Governor shall make the final recommendation for protective actions, and shall serve as the State's primary spokesperson.

4.7.2 Illinois "Department of Nuclear Safety" (DNS)

The Illinois Department of Nuclear Safety (DNS) has both the command authority for radiological aspects of a nuclear incident and the responsibility for performing various radiological functions. These functions include food, water and milk control, radiation exposure control for the general public, and confirmatory accident assessment. During an emergency situation, the DNS shall make protective action recommendations to the Governor and the Illinois Emergency Services and Disaster Agency.

The State of Illinois Department of Nuclear Safety has the responsibility to inform the State of Wisconsin Department of Emergency Government with respect to GSEP emergency classifications at Byron Nuclear Power Station that impacts the 50 mile ingestion pathway zone.

The DNS response to a nuclear incident utilizes two functional sub-groups. They are the Radiological Emergency Assessment Center (REAC) and the Radiological Assessment Field Team (RAFT).

4.7.2.1 Radiological Emergency Assessment Center (REAC)

The DNS has established REAC at its Springfield headquarters. REAC will serve as the command location for all (State-related) radiological aspects of a nuclear incident. The Associate Director of DNS, or his designated alternate, is in command of REAC.

4.7.2.2 Radiological Assessment Field Team (RAFT)

RAFT has been organized to perform the field radiological functions of confirmatory accident assessments during a nuclear emergency. RAFT consists of a Mobile Command Center, a Mobile Nuclear Laboratory, and monitoring and sampling teams.

4.7.3 Illinois "Emergency Services and Disaster Agency" (ESDA)

The Illinois Emergency Services and Disaster Agency (ESDA) has command authority for the non-radiological aspects of a nuclear incident and provides the overall coordination of the emergency response. The Illinois ESDA has the programmatic responsibility to implement protective actions as recommended for the public by the DNS and the Governor.

The State of Illinois has defined four levels of operational response; each level requires increasing degrees of response from State and local agencies. An immediate level of operational response for a given emergency (GSEP) classification shall be required so that the level of response shall accord with the accident classification. The minimum operational response levels for given incident classifications can be summarized as follows:

Level 1 Unusual Event
Notification of ESDA and DNS

Level 2 Alert
Notification of ESDA and its key personnel, DNS and its key personnel, and key local governments. REAC shall be activated.

Level 3 Site Emergency
Same as Level 2 plus the following: RAFT shall be dispatched to the affected site; ESDA shall activate the State EOC; county and local governments shall activate their EOCs and activate their public notification system.

Level 4 General Emergency
Notification of all parties involved in the operational response. Activation of all operations and command centers associated with the operational response. REAC shall be activated and RAFT shall be dispatched. Local governments shall activate their public notification system and implement protective action.

The operational response level for the Unusual Event, Alert, and Site Emergency may be increased to a higher level if deemed necessary.

The State's operational response to an emergency utilizes six (6) operational centers:

- State Emergency Operations Center (SEOC)
- State Command Post (SCP)
- State Staging Center (SSC)
- Community Command Post (CCP)
- County Emergency Operations Center (CEOC)
- Local Government Emergency Operations Center (LGEOC)

The following sections shall discuss the role of these operational centers. Depending upon the nature of the emergency, one or more of these centers may <u>not</u> be activated.

4.7.3.1 State Emergency Operations Center (SEOC)

The SEOC (manned 24 hours per day) is located in Springfield, Illinois and is the central command post for state agencies. The primary function of the SEOC is to coordinate the State's response with local governments. For this purpose, the SEOC is staffed during emergencies by representatives of State agencies under the overall direction of the ESDA Internal Support Coordinator.

4.7.3.2 State Command Post (SCP)

The SCP shall be located near or within the affected plume exposure EPZ and is responsible for the allocation of state agency resources and personnel in support of local government actions.

4.7.3.3 State Staging Center (SSC)

The SSC shall be located near the affected plume exposure EPZ and shall serve as an extension of the SEOC. Staging center personnel shall be responsible for summarizing personnel assignments. The SSC shall also be used to store state resources, such as TLDs and potassium iodide.

4.7.3.4 Community Command Post (CCP)

For certain sites, particularly those near major metropolitan areas and/or contiguous states, a Community Command Post shall be utilized. The CCP shall be similar to the SEOC in that it shall provide a central meeting place for representatives from local governments and contiguous states for tasks like response management and radiological assessment updates.

4.7.3.5 County Emergency Operations Center (CEOC)

In those areas without a CCP, the County EOC shall serve as the primary coordinating center for local government response within the county's jurisdiction and for coordination between counties.

4.7.3.6 Local Government Emergency Operations Center (LGEOC)

The LGEOC shall serve as the command post for organizing each local government's implementation of protective actions.

4.7.4 Notification

Following the preliminary notification by the affected nuclear station, the State shall initiate a notification procedure commensurate with the reported emergency (Refer to the State Plan)

4.7.5 Accident Assessment

Upon notification of an emergency, the DNS shall conduct a confirmatory accident assessment.

This assessment shall involve the determination of the source term, the projection of the atmospheric dispersion of the release, and the deposition of the radioactive material if appropriate.

4.7.6 Protective Actions

The recommendation for protective actions for the public during the preliminary phase of a fixed nuclear facility incident shall, of necessity, be based upon the preliminary assessment made by the facility. After the confirmatory accident assessment, the recommendation for protective actions, if appropriate, shall be made by the Director of DNS to the Governor and the Director of ESDA. Such a recommendation shall be based upon the projected population dose as determined through the confirmatory accident assessment and/or the potential for such exposure.

Following the determination of appropriate protective actions, implementation of these actions shall be under the command and control of the ESDA which shall ensure completion in accordance with the State plan. Protective actions include: evacuation; shelter; access control; food, water, and milk control; and protective actions for emergency workers.

4.7.7 Parallel Actions

Parallel actions are performed by the State after or in conjunction with protective actions. Parallel actions consist of:

1) Law enforcement;

2) Social services;

3) Emergency medical services;

4) Radiation exposure control; and

5) Re-entry.

IPRA CONCEPT OF OPERATIONS

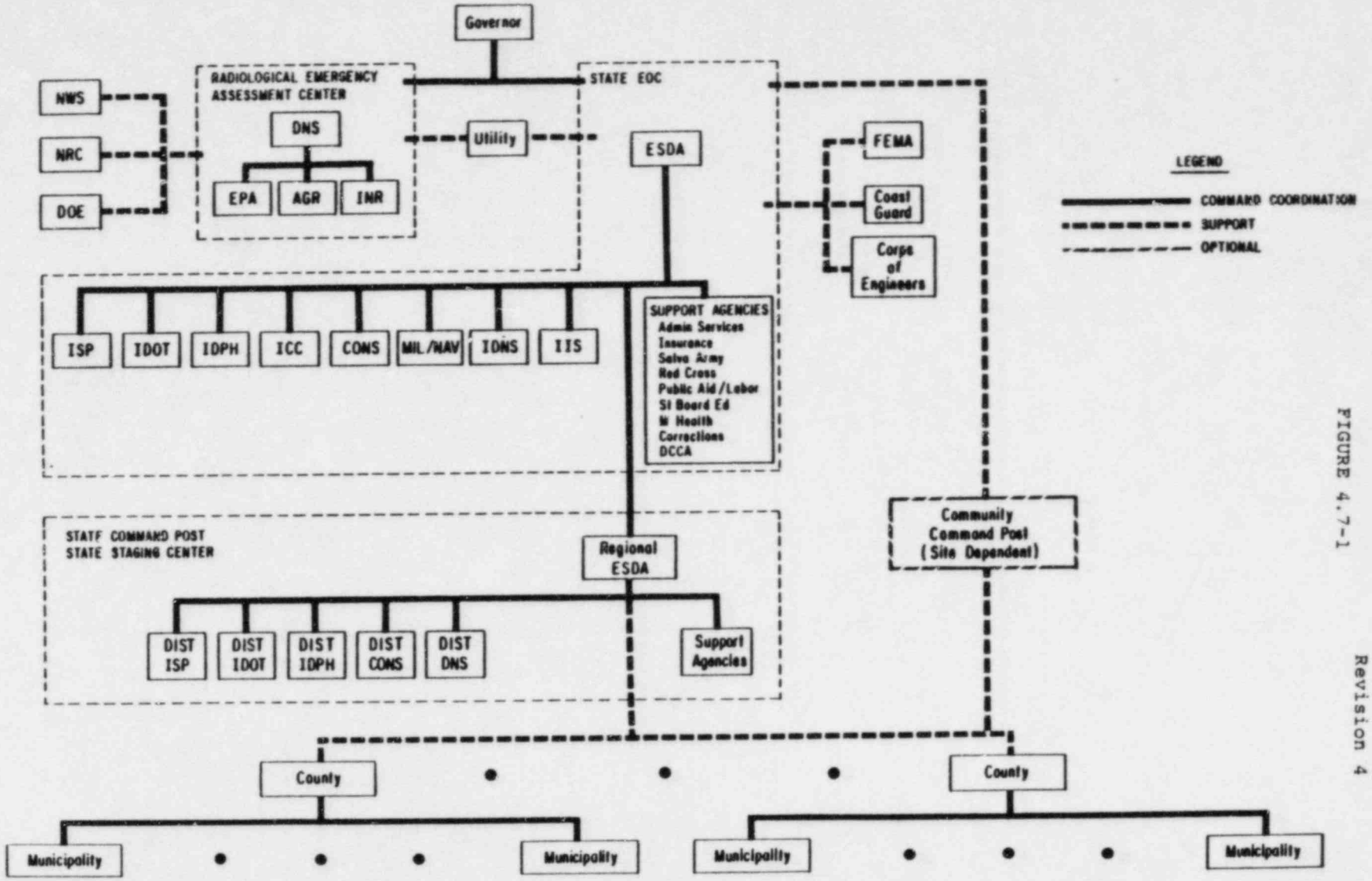

FIGURE 4.7-1

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4.8 The State of Iowa

Much of the Emergency Planning Zone for the Quad Cities Nuclear Station lies within the State of Iowa. The State of Iowa has developed an "Iowa Emergency Plan". This plan is now under formal review by the Federal Emergency Management Agency, Regional and National offices. This section provides a summary of the essential elements of the Iowa Emergency Plan, specifically outlining the specific responsibilities of certain "key" Iowa State Agency players in a response operational mode.

4.8.1 Protective Actions

The State of Iowa uses the following criteria in deciding upon specific protective actions during a radiological emergency:

1) EPA Manual of Protective Actions Guides and Protective Actions for Nuclear Incidents; and

2) Food and Drug Administration guidance regarding contamination of human food and animal feeds published in the Federal Register on October 22, 1982.

The Governor, or in his absence, his designee, will make all protective action decisions (sheltering, evacuation). These decisions will be coordinated with the local government entities involved.

4.8.2 Iowa Office of Disaster Services

The Iowa Office of Disaster Services shall coordinate all activities of State agencies and departments, all local governments, and the utility in support of emergency response activities. These activities shall be coordinated from the Iowa State EOC in Des Moines.

4.8.3 The Iowa Commissioner of Public Health, or his designee, from the Iowa State Department of Health.

The Iowa State Department of Health shall alert the State Hygienic Lab when emergency action conditions are reported by a commercial nuclear power reactor, which impacts upon the public health and safety in Iowa, and when emergency team response has been determined to be necessary or imminent. They shall perform necessary calculation and evaluate the impact of existing and projected radioactivity releases in terms of public health risk. They shall translate the evaluation of existing and projected environmental contamination and resulting dose into terms of alternative protective actions. They shall recommend appropriate protective actions to the Governor's Office, the Iowa Office of Disaster Services, and other State agencies as appropriate.

4.8.4 State Hygienic Lab (SHL)

The State Hygienic Lab, located in Iowa City, Iowa shall: conduct and coordinate all field surveillance and monitoring activities directed toward measuring radiation exposure and radioactivity contamination in the environment resulting from an accident at a commercial nuclear power reactor; provide and coordinate laboratory support of all environmental sampling and radiological monitoring activities during a nuclear emergency; communicate all relevant data and protective action recommendations to the State Department of Health of the Des Moines EOC; provide radiological laboratory support for environmental samples analysis; and provide recommendations for decontamination of contaminated area.

4.8.5 Iowa Department of Water, Air, and Waste Management

This agency shall provide first and primary alert notification to the Federal EPA; prepare environmental advisories to public water supplies; provide primary coordination of disposal of contaminated materials; and provide primary control of public water supplies.

During a serious radiological emergency at the Quad Cities Nuclear Power Station, an Emergency Operating Center shall be activated at the Scott County Courthouse, basement, in Davenport, Iowa. The Director, or designee, of the State Hygienic Lab shall control environmental sampling, conducted by a number of radiological monitoring teams, from this emergency operations center. Also, during an emergency communications shall be established and ongoing between the Iowa Office of Disaster Services in Des Moines, the Illinois Department of Nuclear Safety in Springfield, Illinois, the Scott and Clinton County EOC's, and the Utility, for the purpose of mutual cooperation between Illinois and Iowa with regard to radiological assessment efforts.

4.8.6 Local Government

Local governments are responsible for overall emergency preparedness at the local level. This includes preparation of emergency plans, and designation of assembly areas and congregate care facilities within jurisdictional areas. The local governments are responsible for implementing the actual protective actions taken, including evacuation.

4.9 The State of Wisconsin

A portion of the Emergency Planning Zone for the Zion Nuclear Station lies within the State of Wisconsin. The State of Wisconsin has developed a "State of Wisconsin Peacetime Radiological Emergency Response Plan." This section provides a summary of the essential elements of the Wisconsin emergency plan.

4.9.1 Concept of Operations

Initially, responsibility for responding to a radiological emergency, including evacuation, rests with local governments and their emergency services. Notification, by either local authorities or legal possessors of uncontrolled materials, to the Division of Emergency Government (DEG) that a radiological emergency exists will bring in the resources of the Division of Health, Radiation Protection Section to assess and evaluate the situation and determine protective action. State agency notification for assistance and coordination of response operations of the state agencies in support of local government will be performed by the DEG as determined by the Governor.

4.9.2 Division of Emergency Government

The DEG is to provide the principal support response to emergencies in the State of Wisconsin, coordinate the responses of other state agencies, brief the Governor of emergency situations, and activate the State Emergency Operating Center in Madison, if necessary.

4.9.3 Division of Health

For peace time radiological emergencies, the Bureau of Health has designated the Chief of the Radiation Protection Section as the State Radiological Coordinator (SRC) for the State Radiological Response (RAD RESP) Team. Team members are personnel of the section, as designated by the SRC, augmented by selected personnel from the DEG and other state and local agencies trained specifically for radiological incidents.

Environmental sampling conducted by the State of Wisconsin following a serious radiological emergency will be coordinated from the Madison EOC by the SRC or his designated alternate. In the case of a serious radiological emergency at Zion Station, communications shall be maintained between the Madison EOC and the Illinois Department of Nuclear Safety in Springfield, Illinois for the purpose of mutual cooperation between Illinois and Wisconsin with regard to radiological assessment efforts.

The State of Wisconsin utilizes guidance promulgated by the U.S. Environmental Protection Agency and the U.S. Department of Health and Human Services as the basis for determining what protective actions are necessary during a radiological incident.

4.9.4 Kenosha County

Kenosha County will provide a coordinated local government response in conjunction with State, from the County Emergency Operating Center in Kenosha.

4.10 American Nuclear Insurers (ANI)

In early 1982, American Nuclear Insurers (ANI) issued Bulletin #5B (81) "Accident Notification Procedures for Liability Insureds" which provides revised criteria for the notification of the Pools in the event of a nuclear emergency at one of the liability insured nuclear power reactor sites. This revision brings the ANI/MAELU (Mutual Atomic Energy Liability Underwriters) notification criteria into alignment with the standard emergency classificaton system adopted by the nuclear industry. This document also identifies a suitable channel for follow-up communication by ANI after initial notification.

4.10.1 ANI/MAELU Emergency Assistance

In the event of an extraordinary nuclear occurrence (as defined in the Price-Anderson Law) ANI and MAELU (the pools) have plans prepared to provide prompt emergency funding to affected members of the public.

4.10.2 ANI/MAELU Emergency Assistance (Claims Handling Procedures)

The pools' emergency assistance arrangements contemplate the mobilization and dispatch of emergency claims teams to directly dispense emergency assistance funds to affected members of the public.

The pools should be notified in the event of a nuclear emergency requiring notification of State or Federal governmental agencies, or if the insured believes that off-site persons may be affected and financial assistance of a nature discussed may be required. In these instances ANI expects notification as soon as possible after the initiation of the emergency. To be consistent with industry classificaton systems, the Commonwealth Edison GSEP notification of the pools in the event of an ALERT, SITE AREA EMERGENCY, or GENERAL EMERGENCY should be within eight (8) hours.

To assure operability of communication techniques and equipment ANI will also be notified of exercise scenarios that use the same type of classifications. Even if it appears to be remote that off-site persons will be affected, the pools should be notified in order that response plans can be initiated to the point of alerting teams of adjusters to stand by. Response activity can be discontinued if it proves less severe and does not require pool response.

All nuclear occurrences of an emergency or non-emergency nature which fall under the nuclear liability policy should be reported formally in writing to ANI by the Commonwealth Edison Insurance Administrator.

4.10.4 Emergency Notification and Follow-up Procedures

In the event of an emergency clear lines of communication have been established between each station Emergency Operations Facility/Corporate Command Center and ANI in order to exchange all required information during a developing emergency situation.

ANI maintains 24 hour coverage of an emergency notification number. During normal office hours (8:00 am - 4:00 pm) their number will be answered by the receptionist who will transfer an incoming emergency call to an appropriate individual in the office. Outside of normal office hours this phone line is covered by an answering service. The answering service will intercept the call and obtain the name, affiliation and phone number of the caller. They will then notify a designated ANI staff member who will in turn call back the facility to obtain appropriate information regarding the nuclear accident.

In order that follow-up information is available to the pool Commonwealth Edison Company has established the Recovery Manager/Corporate Command Center Director or their designee as a point of contact that ANI personnel may use to update themselves regarding the status of the emergency.

5.0 CLASSIFICATION OF EMERGENCY CONDITIONS

The GSEP describes six mutually exclusive classifications for emergency conditions, covering the postulated spectrum of emergency situations.

Each of the five (5) emergency classifications are characterized by Emergency Action Levels, or initiating conditions. These initiating conditions for the most part, have been selected so as to not infer any immediate need to implement protective actions, but rather to ensure adequate time is available to confirm inplant readings by implementing assessment measures.

This section describes the GSEP emergency classification system and gives generic example initiating conditions for each class. Additionally, the GSEP Station Director/Corporate Command Center Director/Recovery Manager may declare an incident to fall within a specific emergency classification if it is decided that the incident is of equivalent magnitude to the criteria used to define the emergency class. Each of the first five classifications is associated with a particular set of immediate actions to be taken to cope with situations (These actions are described in Section 6.0).

In addition to the emergency classifications used to describe a developing emergency, guidance is provided for downgrading an accident classification, if warranted, until TERMINATION of the incident is possible. When the emergency condition no longer exists and return to normal plant operation status is imminent, then the emergency shall be TERMINATED. Termination may be performed from any of the five classifications or the Recovery Phase.

Refer to the following tables:

1) Table 5.0-1 - Description of Transportation Accident

2) Table 5.0-2 - Description of Unusual Event

3) Table 5.0-3 - Description of Alert

4) Table 5.0-4 - Description of Site Emergency

5) Table 5.0-5 - Description of General Emergency

6) Table 5.0-6 - Description of Recovery

7) Table 5.0-7 - Emergency Action Levels for Radioactivity In Liquid Effluents.

As a minimum, site specific annexes shall include applicable initiating conditions given in tables 5.0-1 to 5.0-5, and where possible, will relate those conditions with plant instrumentation readings. In some instances, it may be inappropriate for a particular station to adopt initiating conditions exactly equivalent to those conditions specified in this generic plan. In addition to the initiating conditions given in this generic GSEP, site specific annexes should categorize postulated accidents contained in the Stations' Final Safety Analysis Reports.

TABLE 5.0-1
DESCRIPTION OF TRANSPORTATION ACCIDENT

A. CLASS DESCRIPTION

This class involves an accident involving the transportation of radioactive or other hazardous material from a nuclear station or other location where CECo is the shipper.

B. RELEASE POTENTIAL

Depending on the materials involved and the type of accident, there is a wide range of possible releases, i.e., the accident could be of almost any severity.

C. INITIATING CONDITIONS

1. A vehicle transporting radioactive materials or nonradioactive hazardous materials from a nuclear station is involved in a situation in which:

   a. Fire, breakage, or suspected radioactive contamination occurs involving a shipment of radioactive material; or

   b. As a direct result of any hazardous materials:

      - o A person is killed
      - o A person receives injuries requiring hospitalization
      - o Estimated carrier or other property damage exceeds $50,000.

2. Any other condition of equivalent magnitude to the criteria used to define this category, as determined by the Station Director or the Corporate Command Center Director.

TABLE 5.0-2
DESCRIPTION OF UNUSUAL EVENT

A. CLASS DESCRIPTION

This class involves events which indicate a potential degradation of the level of safety at a nuclear station. The situation may or may not have caused damage to the plant, but if there is damage, it does not necessarily require an immediate change in plant operating status.

B. RELEASE POTENTIAL

No releases of radioactive material requiring offsite response or monitoring are expected unless further degradation of safety systems occurs.

C. INITIATING CONDITIONS

1. An aircraft crash or other missile impacting onsite from whatever source.

2. Earthquake being experienced at less than or equal to Operating Basis Earthquake (OBE) levels.

3. Explosion causing damage onsite but not affecting plant operation.

4. Fire requiring offsite assistance but not affecting plant operation.

5. Flood being experienced (e.g., rupture of cooling pond dike affecting offsite property).

6. Tornado nearby that could potentially strike the facility.

7. Toxic gas incident observed near or onsite.

8. Security threat (event) which also poses a radiological threat, or has the potential for substantial degradation of the level of physical security at the station (Refer to Section 9.3 for more information with regard to the Station Security Plan).

9. Loss of required systems to the extent that a unit shutdown is required due to a Technical Specifications ACTION statement (such as for ECCS, fire protection systems, etc).

10. Loss of primary coolant indicated or probable due to:

    a. An unplanned initiation of ECCS resulting in injection of coolant; or

    b. Failure of a primary system safety valve to close; or

TABLE 5.0-2 (CONT)

c. Exceeding either primary/secondary leakage or primary system leakage rate limits as specified in the Technical Specification.

11. Rapid depressurization of PWR secondary side.

12. A gaseous effluent release greater than 10 CFR 20 instantaneous release limits but less than ten times the 10 CFR 20 instantaneous release limits (per 10 CFR 20.105).

13. A liquid effluent release at levels indicated in Table 5.0-6.

14. Transportation of a radioactivity contaminated injured person to an offsite medical facility.

15. An incident in which, as a direct result of hazardous materials, a person is killed or hospitalized or estimated property damage exceeds $50,000.

16. Any other condition of equivalent magnitude to the criteria used to define this category, as determined by the Station Director/CCC Director/Recovery Manager.

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TABLE 5.0-3
DESCRIPTION OF ALERT

A. CLASS DESCRIPTION

This class describes events which involve actual or potential substantial degradation of the level of safety at a nuclear station. An Alert situation may be brought on by either manmade or natural phenomena and can reasonably be expected to occur during the life of the plant.

B. RELEASE POTENTIAL

Dose equivalents up to the lower EPA Protective Action Guides (1.0 rem whole body or 5.0 rem thyroid) are possible.

C. INITIATING CONDITIONS

1. Aircraft crash or other missile impacting onsite and affecting plant operation (e.g., requiring a unit shutdown due to an ACTION statement of the Technical Specifications).

2. Earthquake being experienced at levels greater than Operating Basis Earthquake (OBE) levels.

3. Explosion causing damage to facility and affecting plant operation (e.g., requiring a unit shutdown due to an ACTION statement of the Technical Specifications).

4. Fire requiring offsite assistance and affecting plant operation (e.g., requiring a unit shutdown due to an ACTION statement of the Technical Specifications).

5. Flood near design levels.

6. Tornado striking facility or sustained winds near design levels.

7. Toxic gas entry into the facility at life threatening levels but not affecting vital areas.

8. Evacuation of Control Room anticipated or required with control of shutdown systems established from local stations within 15 minutes.

9. An ongoing security threat (event) of increasing severity, or a different threat, which involves actual or potential substantial degradation of the level of safety of the station from either the radiological or physical security point of view.

10. Loss of offsite power to the onsite Class I (one) 'E' distribution systems and all diesel generators inoperable as per the Technical Specifications for less than or equal to fifteen (15) minutes.

TABLE 5.0-3 (CONT)

11. Loss of vital DC power for less than 15 minutes.

12. Loss of plant shutdown systems:

    a. Loss of all systems capable of maintaining cold shutdown; or

    b. Failure of the Reactor Protection System to initiate and complete a reactor trip which brings the reactor subcritical.

13. Loss of required systems addressed in the Technical Specifications to the extent that an immediate unit shutdown is required.

14. Loss of one of the following three fission product barriers:

    a. Cladding

    b. Reactor Coolant System

    c. Primary Containment

15. Loss of primary coolant indicated by a reactor coolant system leakage increase greater than 50 gpm.

16. Significant primary to secondary leakage for a PWR due to a failure of steam generator tubes (Significant per Tech. Spec. Limits).

17. Fuel damage accident with release of radioactivity to containment or fuel handling building.

18. A gaseous effluent release greater than ten times the 10 CFR 20 instantaneous release limits (per 10 CFR 20.105).

19. A liquid effluent release at levels indicated in Table 5.0-6.

20. An activity in the containment which, if released under worst case meteorological conditons, would result in an offsite dose equivalent of greater than 50% but less than or equal to the lower EPA Protective Action Guides (1.0 rem whole body or 5.0 rem thyroid).

21. Any other condition of equivalent magnitude to the criteria used to define this category, as determined by the Station Director/CCC Director/Recovery Manager.

TABLE 5.0-4
DESCRIPTION OF SITE EMERGENCY

A. CLASS DESCRIPTION

This class describes events which involve major failures of plant functions needed for the protection of the public.

B. RELEASE POTENTIAL

Dose equivalents up to the upper EPA Protective Action Guides (5 rem whole body or 25 rem thyroid) are possible.

C. INITIATING CONDITIONS

1. Aircraft crash or other missile impacting onsite, affecting vital structures, and requiring an immediate unit shutdown.
2. Earthquake being experienced at levels greater than Safe Shutdown Earthquake (SSE) levels with a unit not in cold shutdown or refueling.
3. Explosion causing severe damage and requiring immediate unit shutdown.
4. Fire requiring offsite assistance and requiring immediate unit shutdown.
5. Flood exceeding design levels.
6. Sustained winds exceeding design levels.
7. Toxic gas entry into vital areas at life threatening levels.
8. Evacuation of Control Room and control of shutdown systems not established from local stations within 15 minutes.
9. Security threat involving an imminent loss of physical control of the facility.
10. Loss of offsite power to the onsite Class I (one) 'E' distribution systems and all diesel generators inoperable as per the Technical Specifications for greater than fifteen (15) minutes.
11. Loss of vital DC power for more than 15 minutes.
12. Loss of all systems capable of maintaining hot shutdown.

TABLE 5.0-4 (CONT)

13. Loss of two of the following three fission product barriers:

    a. Cladding

    b. Reactor Coolant System

    c. Primary Containment

14. Loss of primary coolant

    a. (BWR) reactor coolant system leakage increase greater than 500 gpm; or

    b. (BWR) main steam line break outside containment without isolation; or

    c. (PWR) reactor coolant system leakage increase greater than make-up capacity; or

    d. (PWR) steam line break with greater than 50 gpm primary to seconday leakage and indication of fuel damage.

15. Severe primary to secondary leakage for a PWR due to a failure of steam generator tubes.

16. Major damage to spent fuel in containment or fuel handling building.

17. Effluent monitors detect levels corresponding to greater than 50 mR/hr for 1/2 hour or greater than 500 mR/hr whole body for two minutes at the site boundary for worst case meteorological conditions.

18. A liquid effluent release at levels indicated in Table 5.0-6.

19. An activity in the containment which, if released under worst case meteorological conditions, would result in an offsite dose equivalent greater than the lower EPA Protective Action Guides (1.0 rem whole body or 5.0 rem thyroid) but less than or equal to the upper EPA Protective Action Guides (5.0 rem whole body or 25 rem thyroid).

20. Any other condition of equivalent magnitude to the criteria used to define this category, as determined by the Station Director/CCC Director/Recovery Manager.

TABLE 5.0-5
DESCRIPTION OF GENERAL EMERGENCY

A. CLASS DESCRIPTION

This class involves events which involve actual or imminent substantial core degradation or melting with the likelihood of a related release of appreciable quantities of fission products to the environment. This class is characterized by offsite consequences requiring protective measures as a matter of prudence or necessity.

B. RELEASE POTENTIAL

Dose equivalents greater than the upper EPA Protective Action Guides (5 rem whole body or 25 rem thyroid) are possible for the offsite public.

C. INITIATING CONDITIONS

1. Security threat involving a loss of physical control of the facility.

2. Loss of two of the three fission product barriers with an imminent loss of the third fission product barrier:

   a. Cladding

   b. Reactor Coolant System

   c. Primary Containment

3. Effluent monitors detect levels corresponding to greater than 1 rem/hr whole body at the site boundary under actual meteorological conditions.

4. A liquid effluent release at levels indicated in Table 5.0-6.

5. Concurrent with a potential failure of containment which, activity in the containment, if released under worst case meteorological conditions would result in an offsite dose equivalent greater than the upper EPA Protective Action Guides (5.0 rem whole body or 25 rem thyroid).

6. Any other condition of equivalent magnitude to the criteria used to define this category, as determined by the Station Director/CCC Director/Recovery Manager.

TABLE 5.0-6

DESCRIPTION OF RECOVERY

A. CLASS DESCRIPTION

This section describes criteria to be considered prior to reclassification of the emergency class to RECOVERY PHASE. Emergency classifications are used to protect the health and safety of the public, the environment, the emergency workers and the plant equipment by ensuring that commensurate levels of response personnel are activated. They are declared as the emergency develops. However, once the public and environment have been adequately protected, the plant has been stablized, contained, and controlled, the Recovery phase can be established.

The Recovery phase is that period when major repairs are being performed to return the plant to operation. The emergency condition no longer exists. It is the responsibility of the Recovery Manager, plant conditions warranting, to establish the Recovery phase after consultation with cognizant governmental agencies and other parties.

Establishment of a Recovery phase can occur from any Emergency Classification Level. When normal operations are ready to resume the emergency situation will be TERMINATED.

B. RELEASE POTENTIAL

Since the potential of releasing activity depends upon plant parameters and equipment, the establishment of a Recovery phase should not occur as long as uncontrolled releases are, or will occur. As long as offsite doses or dose projections remain above the PAG's due to plant conditions the Recovery phase should not be established. The potential for uncontrolled releases should be negligible and plant conditions stabilized before a Recovery may be established.

C. INITIATING CONDITIONS

The following conditions are to be guidelines for determination of the possibility for establishing a Recovery. The purpose of a Recovery is to terminate the emergency, provide the necessary manpower to handle the long term activities, and to return the plant to an acceptable condition.

Establishment of a Recovery Phase should consider but not be limited to the following:

1. Is the health and safety of the public adequately established?

2. Have plant parameters and equipment status been stabilized, and controlled?

TABLE 5.0-6 (CONT)

3. Have any uncontrolled gaseous releases to the environment been terminated?

4. Has the environment been monitored?

5. Have CECo workers been protected?

6. Has any security threat been neutralized, and/or is plant security under the direction of CECo personnel?

7. Have effluent monitors returned to acceptable levels?

8. Have any uncontrolled liquid releases been terminated?

9. Have core coverage and containment integrity been restored?

10. Are plant safety systems operable?

11. Has the fuel pool been damaged, or spent fuel damage been contained and controlled?

12. Has excessive primary and/or secondary containment leakage been secured and controlled?

13. Is containment activity reduced to levels below that requiring protective actions?

14. Are plant conditions, parameters, systems, or equipment restored and/or replaced such that PAG's are no longer applicable?

15. Has the fire been extinguished?

16. Is the earthquake over?

17. Have adverse environmental conditions at the plant site been terminated?

18. Have flood waters subsided below EAL's?

19. Conditions as described in Tables 5.0-1, -2, -3, -4, or -5 that have initiated the emergency condition have been contained, controlled, eliminated or stabilized such that the classification is no longer applicable.

20. Has any other condition of equivalent magnitude to the criteria used by the Station Director/CCC Director/Recovery Manager to classify an emergency been determined to no longer be applicable?

Table 5.0-7
EMERGENCY ACTION LEVELS
FOR RADIOACTIVITY IN LIQUID EFFLUENTS

GSEP CLASSIFICATION	BASIS	EMERGENCY ACTION LEVEL[a]	
		GROSS BETA/GAMMA	TRITIUM (PWR)
UNUSUAL EVENT	Parallel logic to the NRC EAL for airborne release: T.S. limit ≤ Release < 10xT.S. limit	$1x10^{-7} \leq C(uCi/ml) < 10^{-6}$	$3x10^{-3} \leq C(uCi/ml) < 3x10^{-2}$
ALERT	Lower limit based on EPA's suggested 10 mrem whole body limit for drinking water alert level [b] Upper limit based on FDA's preventive level of 500 mrem whole body OR Release ≥ 10 x T.S. limit	$40 \leq A(Ci) < 2000$[c] OR $C(uCi/ml) \geq 10^{-6}$	$500 \leq A(Ci) < 20,000$ OR $C(uCi/ml) \geq 3x10^{-2}$
SITE EMERGENCY	Lower limit based on FDA's preventive level Upper level based on FDA's emergency level of 5000 mrem whole body	$2000 \leq A(Ci) < 20,000$	$2x10^{4} \leq A(Ci) < 2x10^{5}$
GENERAL EMERGENCY	In excess of FDA's emergency level	$A(Ci) > 2x10^{4}$	$A(Ci) > 2x10^{5}$

a EALs are measured or estimated to be in discharge water flow.
b Unofficial EPA guidance.
c Assumptions:
- Water dilution of 10^{10} liters (typical for any station).
- Weighted concentration limit of 0.2 uCi/l for FDAs preventive level (assumes a mixture of 1% each I-131, Sr-90; 10% Sr-89; 44% each Cs-134, Cs-137).
- Dose from Cs-134 is twice that from Cs-137 per unit of activity consumed.

C = Concentration (microcuries/milliliter) A = Activity in Curies

5.1 Guidance For Downgrading Of Classification

Downgrading of the emergency classification may occur if conditions in the plant have substantially changed so as to alter the condition for the potential of releasing activity to the environment. If the offsite dose equivalent and/or dose equivalent projections have been reduced to a value within a lower emergency classification, the actual classification may be downgraded to a lower level.

The purpose of downgrading the classification is to identify accurately the emergency, and to allow Federal, State and local officials to provide the necessary manpower to handle the current emergency condition.

Downgrading of the emergency classification may occur when conditions exist such that a lower level of classification would be appropriate.

Once a downgrading has been evaluated and established by the Station Director/Recovery Manager/Corporate Command Center Director the appropriate authorization level must report this action in accordance with established reporting procedures.

Figure 5.1-1 depicts the upgrading, downgrading, terminating concepts (see Section 5.2), and returning the plant to its normal operational condition. This figure indicates that any emergency classification may be reclassifieid directly to any other emergency classification, either upgrading to a more severe, or downgrading to a less severe emergency classification. It is also possible to change from any emergency classification to "Recovery" or from "Recovery" back to any emergency classification. This figure also permits an event to change from any emergency classification directly to "Normal Operations" without going through a "Recovery" if conditions permit.

5.2 Guidance For Termination Of Emergency

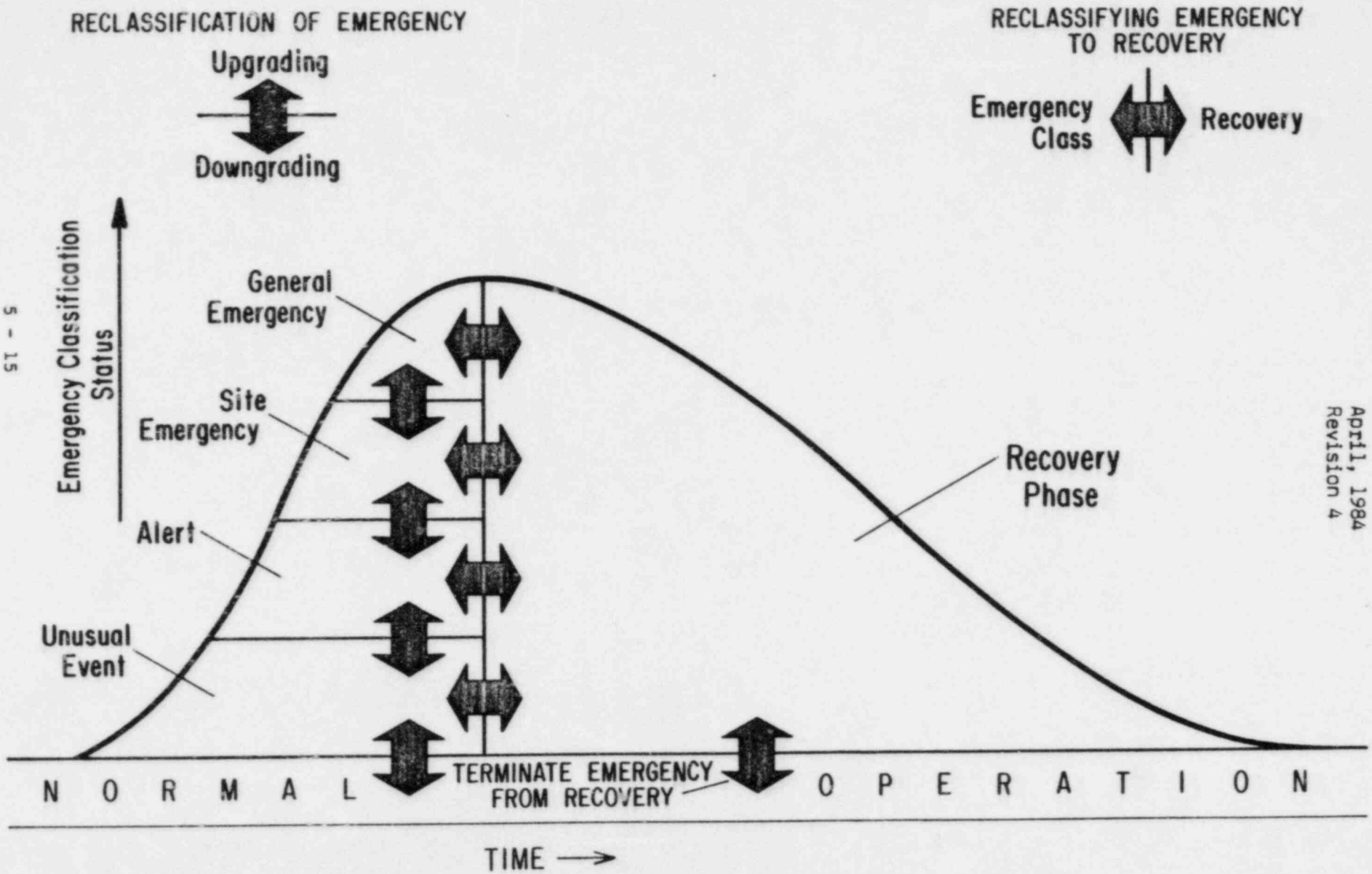
The purpose of terminating an emergency is to provide an orderly turnover of plant control from the GSEP organizations to the normal Commonwealth Edison plant organization. Termination of the emergency is declared by the person in charge: Recovery Manager, Corporate Command Center Director, or Station Director. Termination may occur from any Emergency Classification or from Recovery.

Termination of the emergency should consider but not be limited to the following:

1. Has the potential for activity release been adequately controlled?
2. Have off-site dose equivalent and/or dose equivalent projections been reduced to acceptable levels for public exposure?
3. Have plant parameters returned to acceptable conditions for normal plant organizational control?
4. Have conditions that initiated the emergency been mitigated?
5. Have appropriate Federal, State and local authorities been notified?

FIGURE 5.1-1

EMERGENCY CLASSIFICATION
CHANGE FLOW CHART



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6.0 EMERGENCY MEASURES

This section discusses guidelines for Commonwealth Edison's

6.1 Emergency Response Actions
6.2 Assessment Actions
6.3 Protective Actions for the Offsite Public
6.4 Protective Actions for Onsite Personnel
6.5 Aid to Affected Onsite Personnel

Included are graphic and textual descriptions of preplanned organizational structures for notification of responsible agencies that an emergency has been declared at a nuclear power station. This section identifies communication flow paths for the rapidly developing emergency when only station personnel are available for evaluations and notifications. These same communication flow paths are used with additional requirements for the slowly developing emergency when additional Commonwealth Edison emergency response organizations are available for evaluations and notifications. This section identifies notification schemes for the five (5) emergency classes as listed in Section 5.0 as well as the actions for Recovery, and Downgrading of the Emergency classes.

Throughout each emergency situation, continuing accident assessment will occur; therefore, a generic description of equipment and systems available for these actions is provided within this section.

Protective actions for the public are based upon actual, potential, or imminent release of radioactive materials. Guidance on recommended protective actions, notification schemes, and re-entry to evacuated areas is provided.

For onsite personnel, guidance is provided regarding protective equipment and personnel accounting depending upon their location. Also given is guidance for radiation exposure, decontamination and first aid, and medical transportation and treatment.

6.1 Commonwealth Emergency Response Actions

During an emergency situation at one of its nuclear stations, Commonwealth Edison has the responsibility to implement appropriate emergency measures. These measures include:

- o Notification of responsible authorities;
- o Activation of the GSEP organization;
- o Assessment of the emergency situation; reference Figures 6.3-1 & -2.
- o Initiation of actions to correct or mitigate an emergency at or near the source of the problem;
- o Recommendation of protective actions for the offsite public; reference Tables 6.3-1 and 6.3-2.
- o Initiation of protective measures for onsite personnel; and
- o Provision of aid to affected onsite personnel.

When Commonwealth Edison initially notifies State or local authorities of an emergency condition, the following information should be transmitted as a minimum:

1) Name and title of the reporting person;
2) Location and type of incident (i.e., the emergency classification);
3) Date and time of incident;
4) Whether a release of radioactive material is taking place;
5) Potentially affected population and areas;
6) Whether protective measures may be necessary; and
7) Verification to confirm authenticity of call.

Figure 6.1-1 (A), (B), (C), & (D) shows the initial notification scheme for declared GSEP emergencies.

Followup messages to State and local authorities shall contain the following information if it is known and appropriate:

1) Type of actual or projected release (airborne, waterborne, surface spill), and estimated duration/impact times;

2) Estimate of quantity of radioactive material released or being released and the points and height of release;

3) Chemical and physical form of released material, including estimates of the relative quantities and concentration of noble gases, iodines, and particulates;

4) Meteorological conditions at appropriate levels (wind speed, direction (to and from), indicator of stability; form of precipitation, if any);

5) Actual or projected dose rates at site boundary; projected integrated dose at site boundary;

6) Projected dose rates and integrated dose equivalent at the projected peak and at about 2, 5, and 10 miles, including sector(s) affected; *

7) Estimate of any surface radioactive contamination inplant, onsite, or offsite;

8) Emergency response actions underway;

9) Recommended emergency actions, including protective measures;

10) Requested onsite support from offsite organizations; and

11) Prognosis for worsening or termination of event based on plant information.

Major Commonwealth emergency response actions for upgrading to each emergency class are identified in Table 6.1-1 through Table 6.1-5 as indicated below:

1) Table 6.1-1 - Actions for Transportation Accident;

2) Table 6.1-2 - Actions for Unusual Event;

3) Table 6.1-3 - Actions for Alert;

4) Table 6.1-4 - Actions for Site Emergency;

5) Table 6.1-5 - Actions for General Emergency.

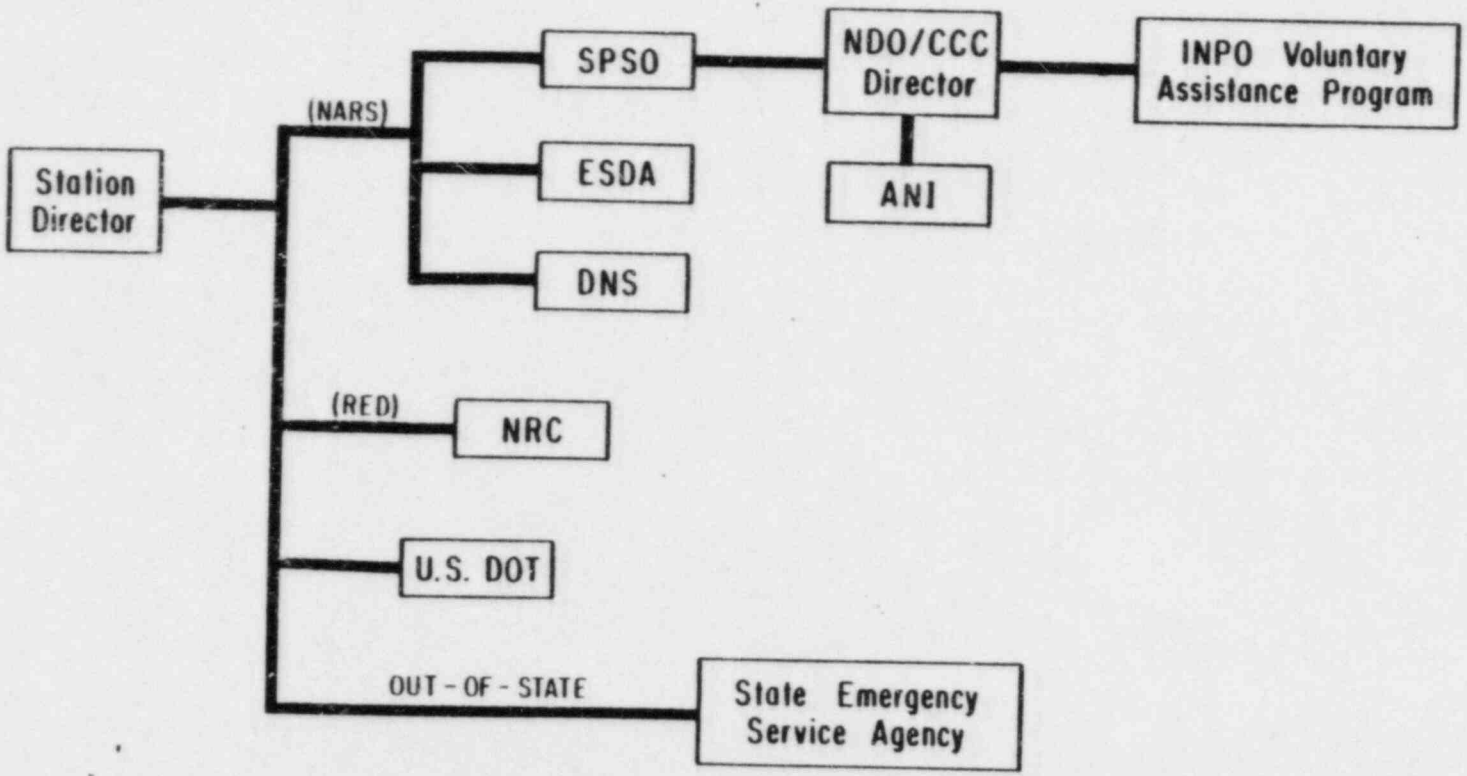
Commonwealth Edison Company actions for downgrading an accident and for entering the recovery phase are given in Tables 6.1-6 and -7.

* Figure 6.1-2 gives the sectors and zone designators that are used at each nuclear station.

FIGURE 6.1-1 (A)

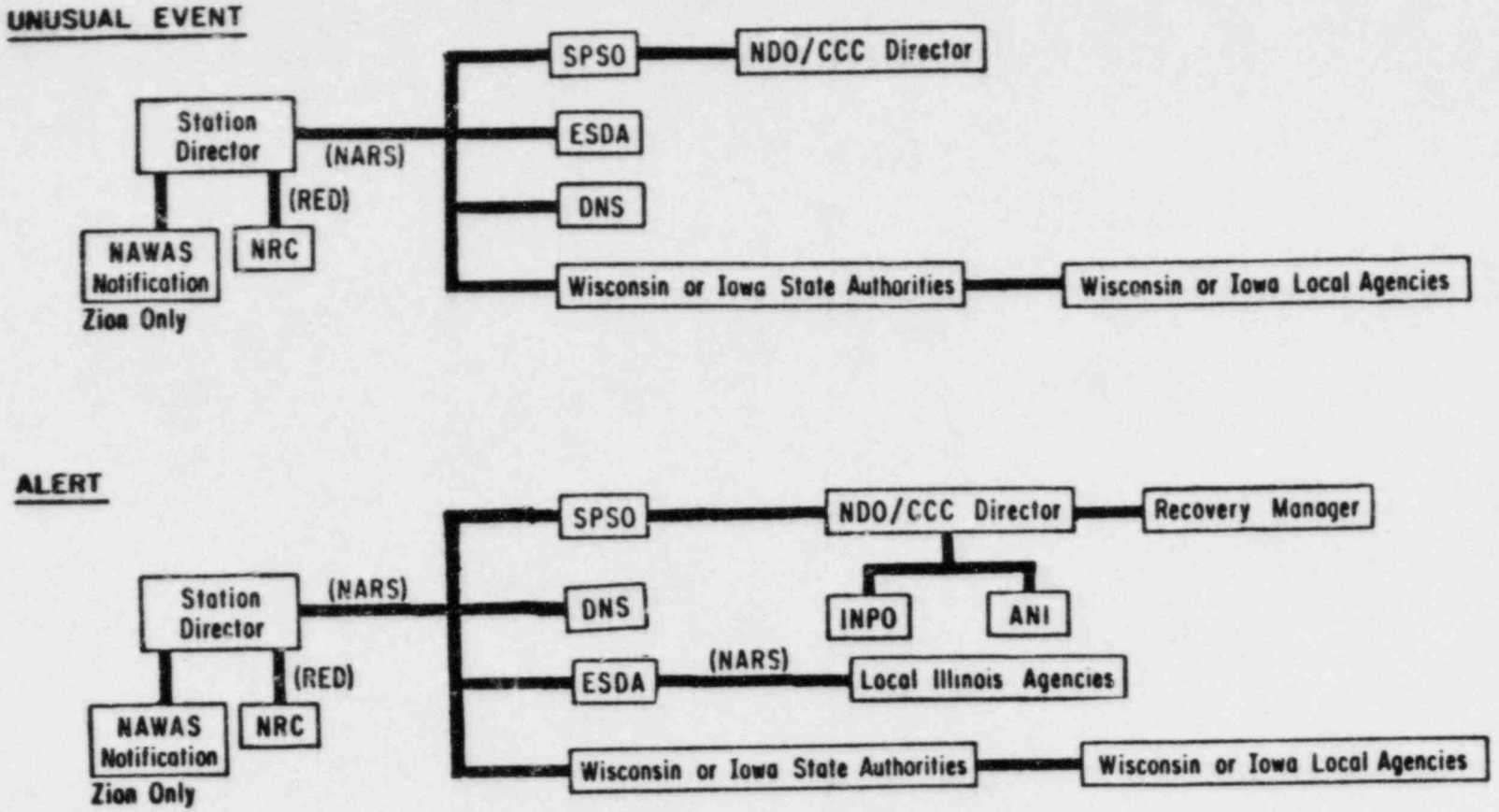
SIMPLIFIED EMERGENCY NOTIFICATION SCHEDULE

TRANSPORTATION ACCIDENT



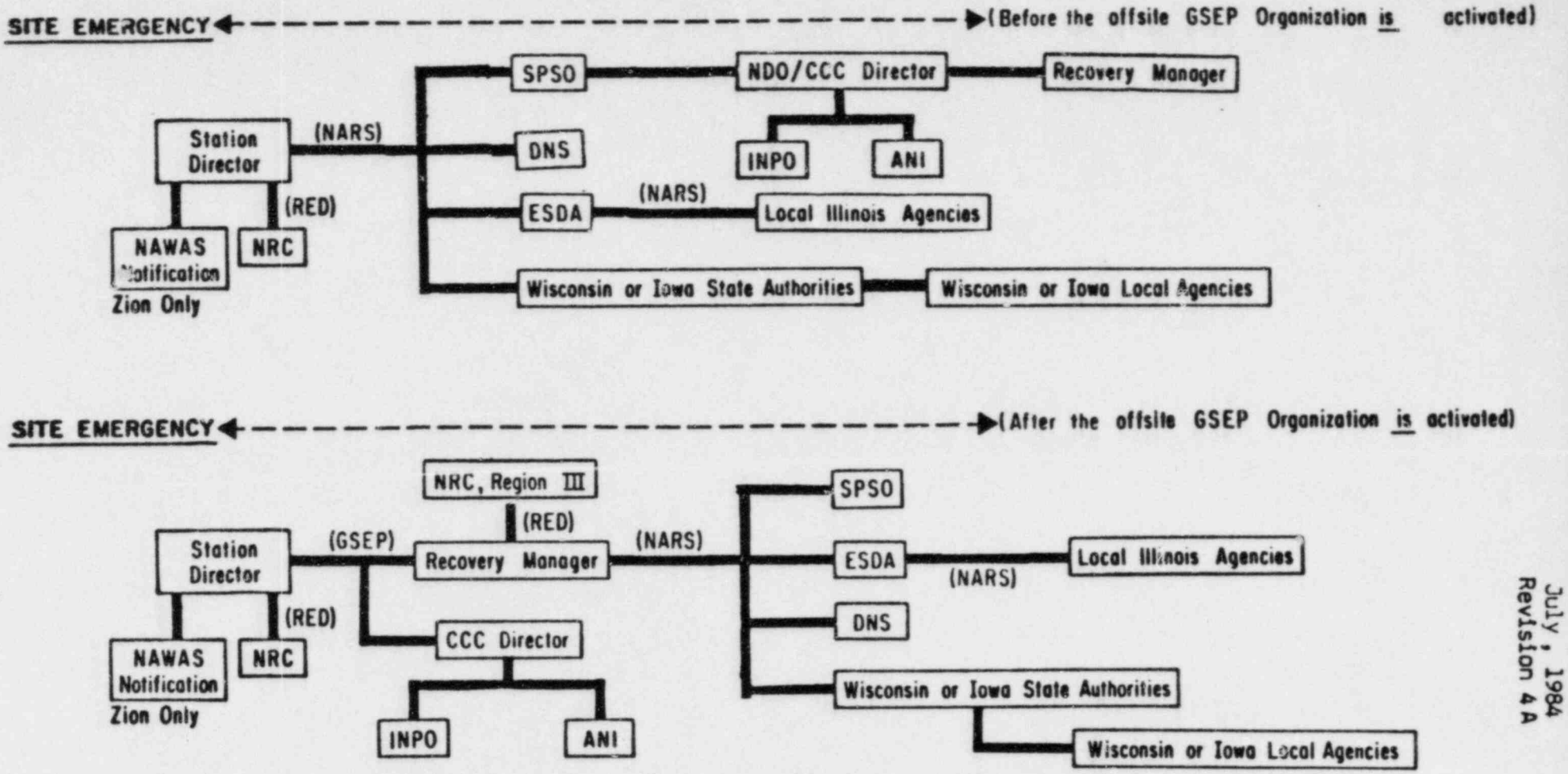
( ) INDICATES TYPE OF PHONE SYSTEM APPLICABLE FOR NOTIFICATION - UNLESS OTHERWISE NOTED, A STANDARD PHONE SYSTEM IS APPROPRIATE

FIGURE 6.1-1 (B)
SIMPLIFIED EMERGENCY NOTIFICATION SCHEDULE



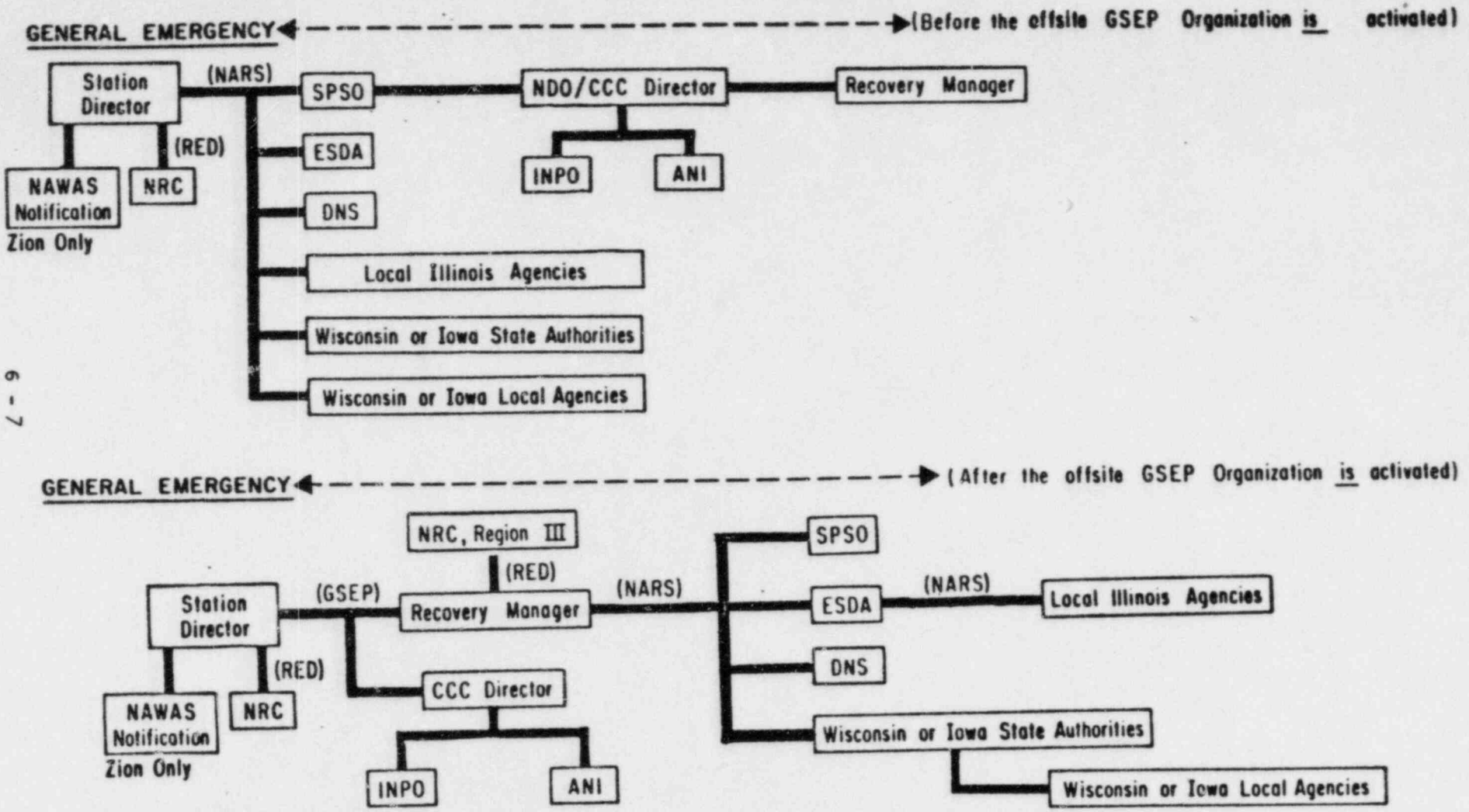
( ) Indicates type of phone system applicable for notification - unless otherwise noted, a standard phone system is appropriate

FIGURE 6.1-1 (C)
SIMPLIFIED EMERGENCY NOTIFICATION SCHEDULE



( ) Indicates type of phone system applicable for notification - unless otherwise noted, a standard phone system is appropriate

FIGURE 6.1-1 (D)
SIMPLIFIED EMERGENCY NOTIFICATION SCHEDULE



( ) Indicates type of phone system applicable for notification - unless otherwise noted, a standard phone system is appropriate

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FIGURE 6.1-2

SECTOR AND ZONE DESIGNATORS

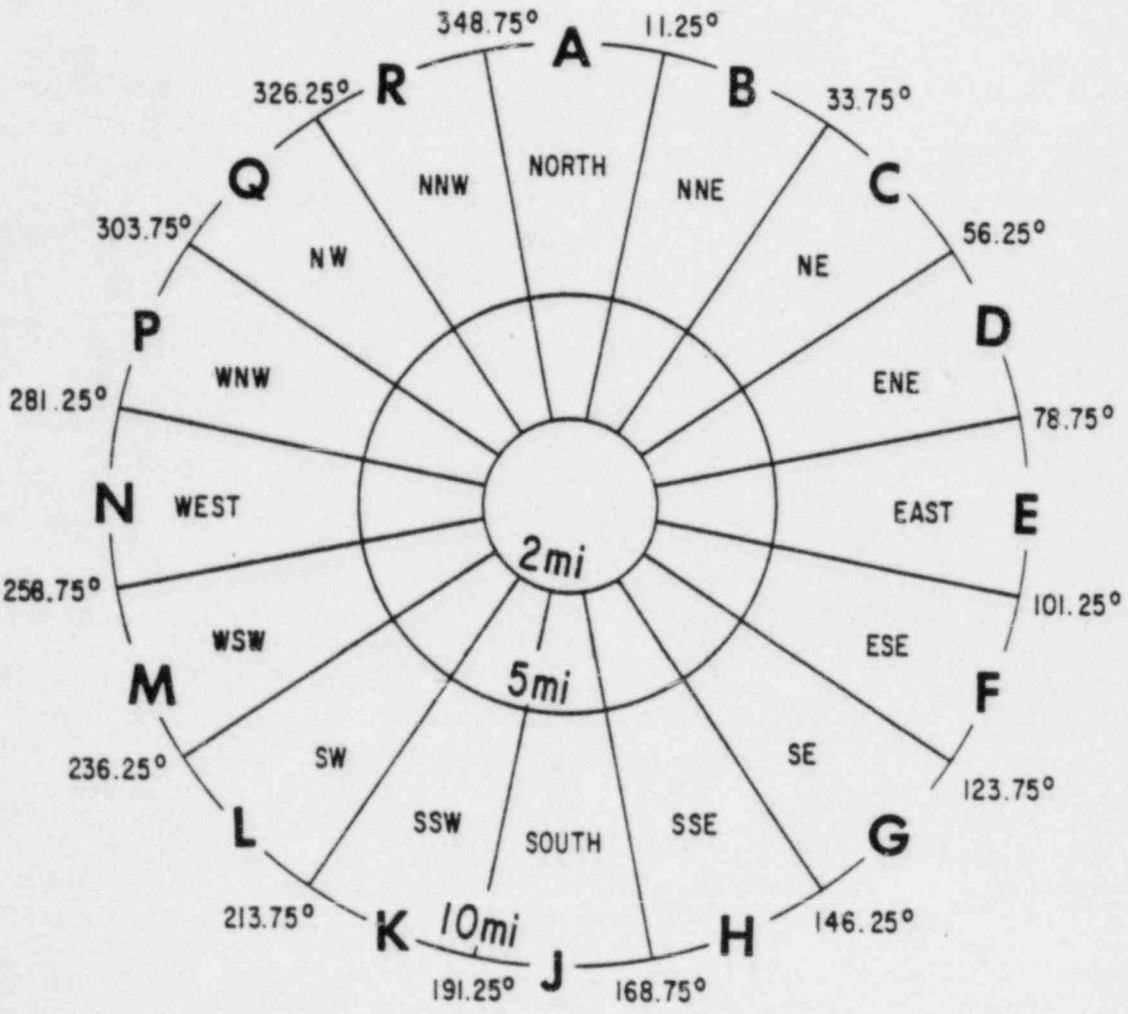


TABLE 6.1-1
COMMONWEALTH ACTIONS FOR TRANSPORTATION ACCIDENT

1. STATION DIRECTOR*(Reference Figure 6.1-1A)

   a. Declare Transportation Accident Condition.*
   b. Notify System Power Dispatcher.
   c. Notify the NRC Operations Center.
   d. Notify the following agencies:
      - The United States Department of Transportation
      - The State and local emergency agencies nearest to the scene of the accident
      - The Illinois Emergency Services and Disaster Agency (if the accident occurred within the State of Illinois)
      - The Illinois Department of Nuclear Safety (if the accident occurred within the State of Illinois)
      - The Iowa Office of Disaster Services (if the accident occurred within the State of Iowa)
   e. Activate those parts of the GSEP Station Group needed to meet the needs of the emergency.
   f. Dispatch personnel for evaluation, if deemed necessary.

2. SYSTEM POWER DISPATCHER

   a. Immediately notify the Nuclear Duty Officer.

3. NUCLEAR DUTY OFFICER/CORPORATE COMMAND CENTER DIRECTOR

   a. Activate those parts of the offsite GSEP organization needed to meet the needs of the emergency.

   b. Ensure that the following agencies were promptly notified of the emergency by the carrier and provide an update as appropriate:
      - The American Nuclear Insurers
      - The United States Department of Transportation
      - The State and local emergency agencies nearest to the scene of the accident
      - The Illinois Emergency Services and Disaster Agency (if the accident occurred within the State of Illinois)
      - The Illinois Department of Nuclear Safety (if the accident occurred within the State of Illinois)
      - The Iowa Office of Disaster Services (if the accident occurred within the State of Iowa)

   c. Notify INPO regarding the Voluntary Assistance Program

*Since a Transportation Accident condition is an offsite occurrence, the Corporate Command Center Director may be notified of the emergency prior to a Station Director being notified; in that case, the CCC Director would declare the Transportation Accident condition.

Table 6.1-1 (Cont.)

Each notification should have included:

- Name of reporter
- Name and address of the carrier represented by the reporter
- Phone number where the reporter can be contacted
- Date, time, and location of incident
- The extent of injuries, if any
- The classification, name, and quantity of hazardous materials involved, if such information is available
- The type of incident and the nature of hazardous material involvement and whether a continuing danger to life or health exists at the scene.

d. If deemed necessary, dispatch environmental monitoring teams or seek the aid of other emergency response organizations to assist in the field.

e. If the Transportation Accident occurs outside the Commonwealth Edison Company service territory and additional radiological assistance is necessary, contact the appropriate utility which has signed into the INPO Voluntary Assistance Agreement.

4. OVERALL GSEP RESPONSE

a. Assess situation and respond.
b. Activate the Corporate Command Center as appropriate.
c. Initiate recovery measures in cooperation with State and local emergency personnel as appropriate.

TABLE 6.1-2
COMMONWEALTH ACTIONS FOR UNUSUAL EVENT

1. STATION DIRECTOR (Reference figure 6.1-1b)

   a. Declare an Unusual Event condition.
   b. Notify System Power Dispatcher
   c. Notify for Zion Station only: Kenosha Co. Wrn. Center, Wisconsin DEG, and Waukesha Office.
   d. Notify the NRC Operations Center.
   e. Activate those parts of the GSEP Station Group needed to meet the needs of the emergency.

2. SYSTEM POWER DISPATCHER

   a. Immediately notify the Nuclear Duty Officer.
   b. If the Nuclear Duty Officer is not contacted within 5 minutes, notify the organizations in 3.a. then resume trying to notify the Nuclear Duty Officer.
   c. Perform the NARS notifications.

3. NUCLEAR DUTY OFFICER/CORPORATE COMMAND CENTER DIRECTOR

   a. Ensure that the following organizations have been notified of the emergency:
      - o Illinois ESDA and DNS;
      - o Scott/Clinton Counties (for QC Station only)
      - o Iowa Office of Disaster Services (for Quad Cities Station only)
      - o Wisconsin Division of Emergency Government (for Zion Station only).
      - o Kenosha County (for Zion Station only)
   b. Activate those parts of the offsite GSEP organization needed to meet the needs of the emergency.
   c. Close out with a verbal summary to NRC, State of Illinois, and contiguous State authorities as appropriate, or escalate to a more severe class.

4. OVERALL GSEP RESPONSE

   a. Assess situation and respond.
   b. Augment on-shift resources.
   c. Recommend protective actions to ESDA/DNS and contiguous State authorities consistent with Figure 6.3-1 and Tables 6.3-1, 6.3-2, and 6.3-3.

TABLE 6.1-3
COMMONWEALTH ACTIONS FOR ALERT

1. STATION DIRECTOR (Reference figure 6.1-1b)

*a. Declare Alert condition.
*b. Notify the System Power Dispatcher.
c. Notify for Zion Station only: Kenosha Co. Wrn. Center, Wisconsin DEG, and Waukesha Office.
*d. Notify the NRC Operations Center.
e. Activate those parts of the GSEP Station group needed to meet the needs of the emergency.
f. Activate the TSC and OSC.

2. SYSTEM POWER DISPATCHER (If the CCC/EOF has not been activated)

a. Notify the Nuclear Duty Officer.
b. If the Nuclear Duty Officer is not contacted within 5 minutes, notify the organizations in 3.b then resume trying to notify the Nuclear Duty Officer.
c. perform the NARS notifications.

3. NUCLEAR DUTY OFFICER/CORPORATE COMMAND CENTER DIRECTOR

a. Perform actions 1a, 1b and 1d if in command of the situation.
b. Ensure that the following organizations have been notified of the emergency:
   - o Illinois ESDA and DNS;
   - o Scott/Clinton Counties (for Quad Cities Station only)
   - o Iowa Office of Disaster Services (for Quad Cities Station only);
   - o Wisconsin Division of Emergency Government (for Zion Station only);
   - o Kenosha County (for Zion Station only)
   - o Institute of Nuclear Power Operations;
c. Activate those parts of the offsite GSEP organization needed to meet the needs of the emergency. Activate the EOF Recovery Group if deemed necessary.
d. Evaluate emergency conditions, personnel requirements, health and safety aspects of the public, Commonwealth Edison Company personnel, plant status, and environmental conditions prior to briefing the NRC, State of Illinois, and contiguous State authorities as appropriate to escalate to a more severe class.
e. Evaluate emergency conditions, personnel requirements, health and safety aspects of the public, CECo personnel, plant status, and environmental conditions prior to briefing the NRC, State Authorities (ESDA & DNS) of the recommendation for downgrading to a less severe class of emergency or to entering a Recovery Mode.
f. Notify ANI (Reference GSEP Section 4.10)

* Actions 1a, 1b and 1d are the responsibility of the Corporate Command Center Director if the Corporate Command Center is activated and the CCC Director has assumed command.

TABLE 6.1-3 (CONT)

4. OVERALL GSEP RESPONSE

a. Assess situation and respond.
b. Augment on-shift resources.
c. Activate the Corporate Command Center, the TSC, and the OSC.
d. Provide periodic plant status updates and meteorological information to ESDA/DNS and contiguous State authorities. If any releases are occurring, provide dose equivalent estimates for actual releases.
e. Recommend protective actions to ESDA/DNS and contiguous State authorities consistent with Figure 6.3-1 and Tables 6.3-1, 6.3-2, and 6.3-3.
f. Provide periodic plant and offsite status updates to ANI.

TABLE 6.1-4
COMMONWEALTH ACTIONS FOR SITE EMERGENCY

1. STATION DIRECTOR (Reference figure 6.1-1c)

*a. Declare Site Emergency.
*b. Notify the System Power Dispatcher.
c. Notify for Zion Station only: Kenosha Co. Wrn. Center, Wisconsin DEG, and Waukesha Office.
*d. Notify the NRC Operations Center.
e. Activate the Station Group.
f. Activate the TSC and OSC.
g. Dispatch personnel for environs monitoring if required.
h. Call-in additional personnel as necessary.
i. Initiate assembly and accountability of site personnel within the protected area.
j. Consider evacuation of non-essential personnel within the Protected Area; evacuate them if there are no serious impediments to doing so.

2. SYSTEM POWER DISPATCHER (If the CCC/EOF has not been activated)

a. Notify the Nuclear Duty Officer of the Site Emergency.
b. If the Nuclear Duty Officer is not contacted within 5 minutes notify the organizations in 3.b then resume trying to notify the Nuclear Duty Officer.
c. Perform the NARS notifications.

3. NUCLEAR DUTY OFFICER/CORPORATE COMMAND CENTER DIRECTOR/RECOVERY MANAGER

a. Perform actions 1a, 1b and 1d if in command of the situation.
b. Ensure that the following organizations have been notified of the emergency:
   - o Illinois ESDA and DNS;
   - o Iowa Office of Disaster Services (for Quad Cities Station only);
   - o Scott/Clinton Counties (for Quad Cities Station only)
   - o Wisconsin Division of Emergency Government (for Zion Station only);
   - o Kenosha County (for Zion Station only)
   - o Institute of Nuclear Power Operations (INPO).
c. Activate the total offsite GSEP organization, including the EOF Recovery Group.
d. Brief the NRC, State of Illinois, and contiguous State agencies as appropriate, to escalate to a General Emergency.
e. Evaluate emergency conditions, personnel requirements, health and safety aspects of the public, Commonwealth Edison Company personnel, plant status, and environmental conditions prior to briefing the NRC, State Authorities (ESDA & DNS) of the recommendation for downgrading to a less severe class of emergency or entering a Recovery Mode.
f. Notify ANI (Reference GSEP Section 4.10).

* Actions 1a, 1b and 1d are the responsibility of the Corporate Command Center Director or Recovery Manager if in command.

TABLE 6.1-4 (CONT)

4. OVERALL GSEP RESPONSE

a. Assess situation and respond.
b. Augment resources through activation of the Corporate Command Center, the TSC, the OSC, and the EOF.
c. Dispatch environmental monitoring teams if deemed necessary. (At first these teams are under the direction of the Station Group; as soon as possible, direction should be transferred to a designated Environs Director.)
d. Provide periodic plant status updates and meteorological information to ESDA/DNS and contiguous State authorities. If any releases are occurring, provide dose equivalent estimates for actual releases.
e. Recommend protective actions to ESDA/DNS and contiguous State authorities consistent with Figure 6.3-1 and Tables 6.3-1, 6.3-2, and 6.3-3.
f. Provide periodic plant and offsite status updates to ANI.

TABLE 6.1-5
COMMONWEALTH ACTIONS FOR GENERAL EMERGENCY

1. STATION DIRECTOR (Reference figure 6.1-1d)

*a. Declare a General Emergency.
*b. Notify the System Power Dispatcher.
*c. Notify the Illinois ESDA, and DNS, Wisconsin DEG (for Zion Station only), Iowa ODS (for Quad Cities Station only), and appropriate local authority of the emergency situation.
*d. Notify the NRC Operations Center.
e. Activate the Station Group.
f. Activate the TSC and OSC.
g. Dispatch personnel for environs monitoring if required.
h. Call-in additional personnel as necessary.
i. Provide plant status updates to the state and local authorities (until this function can be performed by the CCC Director or the Recovery Manager.)
j. Assemble and evacuate non-essential personnel within the Protected Areas if not already done.

2. SYSTEM POWER DISPATCHER (If the CCC/EOF is not already activated)

a. Immediately notify the Nuclear Duty Officer of the General Emergency.

3. NUCLEAR DUTY OFFICER/CORPORATE COMMAND CENTER DIRECTOR/RECOVERY MANAGER

a. Perform actions 1a, 1b, 1c and 1d if in command of the situation.
b. Ensure that the Institute of Nuclear Power Operations has been informed of the appropriate classification.
c. Activate the total offsite GSEP organization, including the Recovery Group.
d. Brief the NRC, State of Illinois, local authorities, and contiguous State agencies, as appropriate of recommendation for downgrading to a less severe class of emergency or entering a recovery mode.
e. Notify ANI (Reference GSEP Section 4.10).

4. OVERALL GSEP RESPONSE

a. Assess situation and respond.
b. Augment resources through activation of the Corporate Command Center, the TSC, the OSC, and the EOF.

* Actions 1a, 1b, 1c and 1d are the responsibility of the Corporate Command Center Director or Recovery Manager if in command.

TABLE 6.1-5 (CONT)

c. Dispatch environmental monitoring teams if required. (At first these teams are under the direction of the Station Group; as soon as possible, direction should be transferred to a designated Environs Director.)
d. Provide periodic plant status updates and meteorological information to ESDA/DNS and contiguous State authorities. If any releases are occurring, provide dose equivalent estimates for actual releases.
e. Recommend protective actions to ESDA/DNS and contiguous State authorities consistent with Figure 6.3-1 and Tables 6.3-1, 6.3-2, and 6.3-3.
f. Provide periodic plant and offsite status updates to ANI.

TABLE 6.1-6

COMMONWEALTH ACTIONS FOR RECOVERY

1. STATION DIRECTOR/CORPORATE COMMAND CENTER DIRECTOR/RECOVERY MANAGER

After reviewing the guidance in Table 5.0-7.

a. Evaluate the status of this new classification and the requirements to support this classification.
b. Declare the Recovery phase to be in effect.
c. Notify the following:
   - o The System Power Dispatcher
   - o The Illinois ESDA and DNS
   - o The Iowa Office of Disaster Services (for Quad Cities Station only)
   - o The Wisconsin Division of Emergency Government (for Zion Station only)
   - o The Contiguous local authorities as required
   - o The NRC
d. Evaluate parameters, environmental condition and other information to determine what long-term organization is required for the Recovery phase.
e. Schedule personnel, material, and equipment necessary to support the Recovery phase.
f. Provide mechanisms, if required, for periodic plant status and meteorological information to ESDA/DNS and contiguous state authorities.
g. Provide recommendations regarding long-term effect and re-entry into sheltered and/or evacuated areas.
h. Determine level of activation and/or manning of emergency response facilities if pre-planned events are to occur that have a potential (possibility) of impacting upon the health and safety of the public, CECo personnel, plant equipment, and/or the environment.
i. Modify the Station Group (OSC and TSC), Recovery Group (EOF) and Corporate Group (CCC) as necessary to support the Recovery Phase Classification.
j. Notify INPO via the designated emergency call number.
k. Notify ANI via their emergency notification number.

TABLE 6.1-7

COMMONWEALTH ACTIONS FOR DOWNGRADING OF EMERGENCY CLASSIFICATION

1. STATION DIRECTOR/CORPORATE COMMAND CENTER DIRECTOR/RECOVERY MANAGER

After review of the guidance in section 5.1

a. Evaluate the status of this new classification and the requirements to support this classification.
b. Downgrade to a lower emergency classification.
c. Notify the following:
   - o The System Power Dispatcher
   - o The Illinois ESDA and DNS
   - o The Iowa Office of Disaster Services (for Quad Cities Station only)
   - o The Wisconsin Division of Emergency Government (for Zion Station only)
   - o Contiguous State Authorities
d. Modify the Station Group, Recovery Group, and Corporate Command Center as necessary to support the new classification.
e. INPO and ANI shall be notified via their respective emergency notification numbers.

2. OVERALL GSEP RESPONSE

a. Proceed as required by the new GSEP classification using guidance of Tables 6.1-2 to 6.1-7, as applicable.

6.2 Assessment Actions

Throughout each emergency situation, continuing accident assessment will occur. Based upon these assessments, decisions will be made to implement specific emergency measures.

6.2.1 Evaluation of Plant Conditions

Evaluation of plant conditions is accomplished through the monitoring of plant parameters both from indication in the Control Room and within the plant. Some of the more important plant parameters to be monitored in the Control Room are assembled into a single display location which is entitled the "Safety Parameter Display System" (SPDS)*. The SPDS monitors such parameters as: reactor coolant system pressure, reactor/pressurizer water level, containment pressure, suppression pool water level and temperature, reactor power, feedwater flow, safety system status, containment radiation level and effluent monitor readings.

In addition to the SPDS there is the A-model of the Offsite Dose Calculation System (ODCS) which uses plant parameters and meterological conditions to automatically assess conditions and then produce recommendations to Control Room personnel regarding Emergency Action Levels (EAL'S)*.

* This system will not be fully operable at all stations as described until the stations are equipped with new plant process computers, and the software programs are fully developed. Reference the CECo April 1983 response to NUREG 0737 Supplement #1 or latest submitted schedule for planned operational dates.

6.2.2 Radiological Measurements

Inplant radiological measurements should provide information that may help determine the nature, extent, and source of emergency conditions. Systems are installed to permit reactor coolant and containment atmosphere sampling even under severe accident conditions.

Environmental teams are dispatched by Commonwealth Edison to perform a variety of functions during conditions that involve significant releases of radioactive materials from the plant. In addition to beta/gamma field measurements, the change-out of TLDs and air sampler cartridges can be performed. Other actions may include soil, water, and vegetation sampling, as well as plume location verification.

6.2.3 Dose Projections for the Offsite Public

Dose assessment activities shall be conducted with an emphasis on determining the necessity for protective action. Radiological and meteorological instrumentation readings shall be used to project dose rates at predetermined distances from the station, and to determine the integrated dose equivalent received. The primary method of estimating offsite doses is through the use of an Offsite Dose Calculation System described in Section 7.3.3.

6.2.4 Core Damage Assessment

To aid GSEP and Control Room personnel in an assessment of core damage during an emergency condition, each site specific annex shall contain a plot of activity (Ci) versus containment radiation reading (R/hr) for each reactor unit at the site (if of different design). Four points shall be marked on this plot representing:

1) Core release of 25% iodines and 100% noble gases (Reference: Reg. Guide 1.3);

2) 100% release of gap activity (Reference: Reg. Guide 1.25);

3) 0.2% core release of iodines and noble gases (for BWRs) or 2.0% core release of iodines and noble gases (for PWRs) (reference: Reg. Guide 4.2); and

4) 100% release of coolant activity;

at t = 0 following an accident, assuming an immediate release of said activities into the containment.

6.3 Protective Actions for the Offsite Public

6.3.1 Commonwealth Recommendations for Protective Action

For incidents involving actual, potential, or imminent releases of radioactive material to the atmosphere, the current issue of the "Manual of Protective Action Guides and Protective Actions for Nuclear Incidents" (EPA 520/1-75-001) shall be used as the basis for recommendations for protective actions for the offsite public. The EPA Guide provides Protective Action Guides (PAGs) for whole body external gamma radiation and for inhalation of radioactive material in an airborne plume.

The most effective actions to be recommended to the public are evacuation, sheltering, and access control. Evacuation potentially provides the greatest margin of protection and should be the primary means of protective emergency action in the event of a gaseous fission product release. On the other hand, because sheltering may be implemented in less time than evacuation, it may be the protective action of choice if rapid evacuation is impeded for any reason. Also, since sheltering is less disruptive than evacuation, it may be the protective action of choice when the dose reduction factor associated with shelter is adequate to reduce the projected dose to less than PAG levels. Access control is an effective action to avoid exposure of personnel who might otherwise enter high exposure areas unnecessarily.

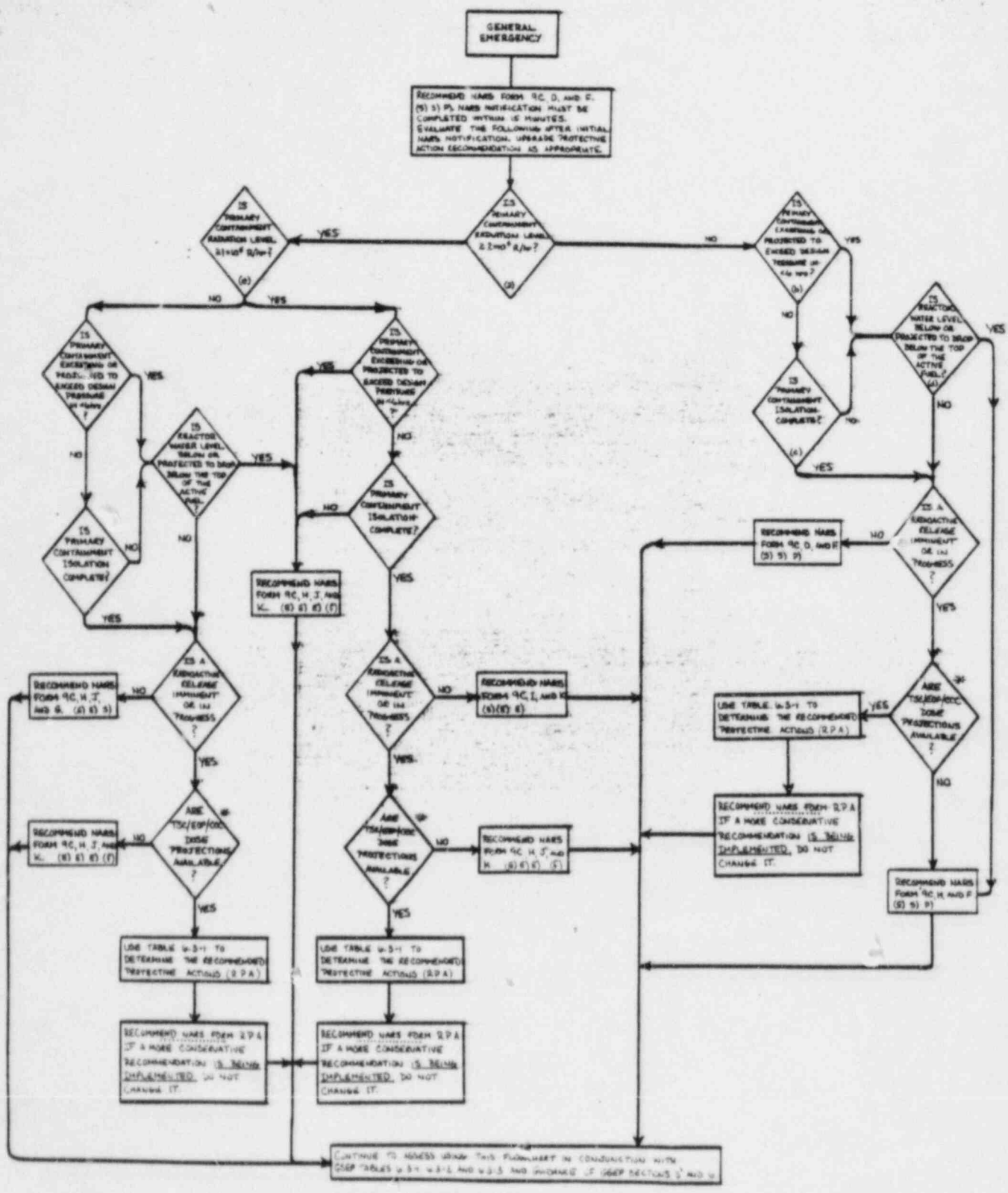
For incidents involving contamination of food, water, or milk, protective action recommendations will be consistent with the guidance of the U.S. Food and Drug Administration published in the Federal Register, "Accidental Radioactive Contamination of Human Food and Animal Feeds; Recommendation for State and Local Agencies" Vol. 47, No. 205, October 22, 1982. The FDA guidance includes PAGs for two levels: a Preventive and an Emergency PAG. The Preventive PAG is a 1.5 rem projected dose equivalent commitment to the thyroid or a 0.5 rem whole body dose equivalent commitment. The Emergency PAG is 10 times the preventive PAG, or a 15 rem thyroid or a 5 rem whole body dose equivalent commitment. This guideline has also been adopted by FEMA.

Protective action (such as placing dairy cows on uncontaminated stored feed) should be taken whenever a contaminating event is projected to expose an individual at the preventive level PAG. When the projected dose equivalent reaches the emergency level, food stuffs should be withheld from commerce until a judgement is made on condemnation or other appropriate action.

Figure 6.3-1, and Tables 6.3-1, 6.3-2, and 6.3-3 have been developed to aid Control Room personnel during a rapidly developing emergency situation requiring urgent action by offsite officials. These figures and tables provide a NARS recommendation based upon the nature of the emergency condition.

FIGURE 6.3-1

RECOMMENDED PROTECTIVE ACTIONS — GENERAL EMERGENCY



NOTE: THIS FLOWCHART IS DESIGNED TO AID THE USER FOR AN INCREASING SEVERITY CONDITION. FOR A DECREASING SEVERITY CONDITION, PARTICULARLY A CONDITION THAT COULD LEAD TO A DOWNGRADING OF THE CLASSIFICATION AND SUBSEQUENT REDUCTION IN THE RECOMMENDED PROTECTIVE ACTIONS, CONSULTATION WITH APPROPRIATE GOVERNMENTAL OFFICIALS IS RECOMMENDED BEFORE REVISION ON NARS. DO NOT CONSULT ON NARS; USE AN ALTERNATIVE COMMUNICATION SYSTEM. READ OSEP SECTIONS 5 AND 6 FOR ASSISTANCE.

NOTE: EVACUATION WHEN NOTED, IS THE RECOMMENDED PROTECTIVE ACTION EXCEPT WHEN WEATHER CONDITIONS PERMIT AND AN EVACUATION TIME ANALYSIS CONFIRMS IT AS THE PREFERRED CHOICE. OTHERWISE SHELTERING IS THE PROTECTIVE ACTION TO RECOMMEND. IF EVACUATION IS RECOMMENDED FOR ZONAL AREAS V AND Z, AND IF ZONAL AREAS V AND Z ARE IN WISCONSIN OR IOWA, THEN THE RECOMMENDATION FOR EVACUATION SHOULD EXTEND ONLY TO THE BOUNDS AT WHICH THE PROJECTED DOSE IS 1 REM WB OR 5 REM THYROID, WHICHEVER IS THE GREATER RANGE. SHELTERING IS THE PROTECTIVE ACTION FROM THIS RANGE OUT TO 5 MILES IF THE "RANGE" IS IN ZONE V, AND OUT TO 10 MILES IF IT IS IN ZONE Z.

TSC/EOF/CCC MEANS THE TSC OR EOF OR CCC ARE MANNED BY ENVIRONMENTAL PERSONNEL.

Footnotes to Figure 6.3-1

(a) $2x10^4$R/hr corresponds to approximately 20% GAP release as described in Table B.2 of Appendix to NUREG/GR-2925, In-plant considerations for Optimal Offsite Response to Reactor Accidents, November, 1982.

(b) Primary Containment pressure was chosen as the parameter that would be indicative of imminent containment failure. Imminent is defined here as a 100% probability that the condition will occur in less than (6) six hours. Six hours was chosen because offsite dose calculations are based on a six hour projection. It is expected that within this time period dose projections based on calculations would be made.

(c) Incomplete Primary Containment Isolation would be another indication of a containment failure.

(d) The top of the active fuel was chosen as the point of concern. Design studies show that the core can be protected with water level much below the top of the active fuel. However, once water level drops below the top of the active fuel the potential for further core damage is increased. As much time as possible is needed to move the offsite public.

(e) 1 x 10^5 R/hr corresponds to approximately 100% GAP release as described in the reference listed in Note (a).

(f) This recommendation is made under the most severe conditions. At this point the philosophy is to move the people who are closest to the plant first and to move those who live farther away next until all who live within the area at risk are evacuated.

INTENTIONALLY

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GSEP Table 6.3-I

Recommended Protective Actions For Actual or Imminent Gaseous Release Conditions

Accident Classification		Projected Doses (Rem)** in Zonal Areas X, Y, & Z. Whole Body X	Y	Z	Thyroid X	Y	Z	Recommended Prot. Actions (S-Shelter, E-Evacuation, P - Prepare for Possible action, I.O.- info only) X	Y	Z	NARS Form Section 9
1. Unusual Event	(1)	Dose Projection work is not finished; C.R.L. is < 200 R/hr						I.O.			(1) 9.A
	(2)	Not finished and C.R.L. is ≥ 200 R/hr						Change accident class to alert; see below			(2) -
	(3)	< 0.5	Any	Any	< 2.5	Anywhere in 10 mile zone		I.O.			(3) 9.A
	(4)	≥ 0.5	Any	Any	≥ 2.5	Anywhere		Change accident class to alert; (Sec. 2 (4))			(4) -
	(5)	≥ 1	Any	Any	≥ 5	Anywhere		Change accident class to site emergency; (Sec. 3 (6))			(5) -
2. Alert	(1)	Not Finished and C.R.L. is < 200 R/hr						I.O.			(1) 9.A
	(2)	Not Finished and C.R.L. is 200-400 R/hr						(P)	P)	P)	(2) 9.B
	(3)	Not Finished and C.R.L. is > 400 R/hr						Change accident class to site emergency; (Sec. 3 (2))			(3) -
	(4)	< 1	Any	Any	< 5	Anywhere		(P)	P)	P)	(4) 9.B
	(5)	≥ 1	Any	Any	≥ 5	Anywhere		Change accident class to site emergency; (Sec. 3 (6))			(5) -
3. Site Emergency	(1)	Not Finished and C.R.L. is < 400 R/hr						(P)	P)	P)	(1) 9.B
	(2)	Not Finished and C.R.L. is 400-2000 R/hr						(S)	P)	P)	(2) 9.C&D
	(3)	Not Finished and C.R.L. is > 2000 R/hr and containment integrity exists						(S)	P)	P)	(3) 9.C&D
	(4)	Not Finished and C.R.L. is > 2000 R/hr and containment integrity is lost or loss is imminent						Change accident class to general emergency; go immediately to Fig. 6.3-1.			(4) -
	(5)	< 1	Any	Any	< 5	Anywhere		(P)	P)	P)	(5) 9.B
	(6)	≥ 1	< 1	Any	≥ 5	< 5	Any	(E*)	S*)	P)	(6) 9.C,H,&F
	(7)	≥ 1	≥ 1	< 1.0	≥ 5	≥ 5	< 5	(E*)	E*)	S)	(7) 9.C,H,J,&G
	(8)	≥ 5	Any	Any	≥ 25	Any	Any	Change accident class to general emergency (Sec. 4 (5))			(8) -
4. General Emergency	(1)	Go to Fig. 6.3-1 Immediately before attempting to make dose projections (Steps (2) through (6) should be used only in conjunction with Fig. 6.3-I)						-			(1) -
	(2)	≥ 1	< 1	Any	≥ 5	< 5	Any	(E*)	S)	P)	(2) 9.C,H&F
	(3)	≥ 1	≥ 1	< 1	≥ 5	≥ 5	< 5	(E*)	E*)	S)	(3) 9.C,H,J,&G
	(4)	≥ 1	≥ 1	≥ 1	≥ 5	≥ 5	≥ 5	(E*)	E*)	E*)	(4) 9.C,H,J,&K
	(5)	≥ 5	≥ 1	< 1	≥ 25	≥ 5	< 5	(E*)	(E*)	E*)	(5) 9.C,I&K
	(6)	≥ 5	≥ 5	≥ 1	≥ 25	≥ 25	≥ 5	(E*)	(E*)	(E*)	(6) 9.C & new code needed for 0-10 miles evacuation

Foot Notes: The symbol "( )" represents the entire radius of all sectors of the designated zonal area, where a single ")" represents the three downwind sectors only of the designated zonal area. Example: (S) S) P). The following recommendation is (S) - shelter 0-2 mile radius, S) - shelter 2-5 mile three downwind sectors, P) - Prepare for possible action 5-10 mile three downwind sectors.

C.R.L. - Containment radiation level (R/hr)
R - Range (Miles)
SB - Site Boundary
Any - Any dose irrespective of quantity

* Evacuation, when noted, is the recommended protective action only when weather conditions permit and an evacuation time analysis confirms it as the preferred choice, otherwise sheltering is the protective action to recommend. If evacuation is recommended for zonal areas Y and Z and if Zonal areas Y and Z are in Wisconsin or Iowa, then the recommendation for evacuation should extend only to the range at which the projected dose is 1 Rem WB or 5 Rem thyroid, whichever is the greater range. Sheltering is the protective action from this range out to 5 miles if the "range" is in Zone Y and out to 10 miles if it is in Zone Z.

** Projected doses are made for actual or imminent release conditions and should be based on a 6 hour default period if the release termination time is unknown. (Use a two (2) hour default period for winds into Iowa or Wisconsin.) Projected dose rates are also based on the most likely release point and the existing site meteorological conditions.

The zones X, Y, and Z are: X = site boundary out to 2 miles (not including 2 mile)
Y = 2 miles out to 5 miles (not including 5 mile)
Z = 5 miles out to 10 miles (including 10 miles)

TABLE 6.3-2

GSEP GUIDELINES FOR PROTECTION AGAINST INGESTION OF CONTAMINATION FOR THE OFFSITE PUBLIC

FOOD AND WATER CONTAMINATION

A. Derived Response Levels

		Preventive Action Levels*+		
Nuclide**	Critical Organ	Milk/Water***	Total Intake via All Food and Water Pathways	Pasture Grass (Fresh Weight)
I-131	Thyroid	0.015 uCi/l	0.09 uCi	0.05 uCi/kg
Cs-134	Whole Body	0.15 uCi/i	4.0 uCi	0.8 uCi/kg
Cs-137	Whole Body	0.24 uCi/l	7 uCi	1.3 uCi/kg
Sr-90	Bone	0.009 uCi/l	0.2 uCi	0.18 uCi/kg
Sr-89	Bone	0.14 uCi/l	2.6 uCi	3.0 uCi/kg

*The preventive derived response action levels relate to a 1.5 rem projected dose equivalent commitment to the thyroid or to a 0.5 rem projected dose equivalent commitment to the whole body, bone, or any other organ. Emergency action levels are equal to ten (10) times the preventive levels and relate to either a 15 rem projected dose equivalent commitment to the thyroid or a 5 rem projected dose equivalent commitment to the whole body, bone, or any other organ. **If other nuclides are present, use Regulatory Guide 1.109 to calculate the dose equivalent commitment to the critical organ(s). Infants are considered to be the critical segment of the population.

B. Recommended Protective Actions

Preventive Level Exceeded	Emergency Level Exceeded
. For pasture; remove lactating dairy cows from contaminated pasturage and substitute uncontaminated stored feed. Also, substitute a source of uncontaminated water. . For milk; withhold milk from market to allow radioactive decay. Consider diversion of fluid milk for production of butter or evaporated milk. . For fruits and vegetables; wash, brush, or scrub to remove contamination. Allow radioactive decay through canning, dehydration, or storage. . For grains; mill and polish.	. Isolate food containing radioactive contamination to prevent its introduction into commerce and determine whether condemnation or another disposition is appropriate. Before taking this action, consider: - Availability of other possible actions; - Importance of particular foods in nutrition; and - Time and effort required to take action.

***The preventive action levels apply to water as well as milk; the protective action for water would be to use a suitable source of uncontaminated water.

EPA Publication:

+ "Accidental Radioactive Contamination of Human Food and Animal Feeds; Recommendation for State and Local Agencies," Federal Register, Volume 47, Number 205, October 22, 1982.

TABLE 6.3-3
SUMMARY OF POSSIBLE OFFSITE PROTECTIVE ACTIONS
TO BE RECOMMENDED OR IMPLEMENTED DURING AN EMERGENCY +

ACCIDENT PHASE	EXPOSURE PATHWAY	EXAMPLES OF ACTION TO BE RECOMMENDED
1 EMERGENCY PHASE (0.5 to 30 hours*)	Inhalation of gases, radioiodine, or particulate	Evacuation, shelter, access control, respiratory protection, prophylaxis (thyroid protection)
	Direct whole body exposure	Evacuation, shelter, access control
	Ingestion of milk	Take cows off pasture, prevent cows from drinking surface water, discard contaminated milk, or divert to stored products such as cheese
2 INTERMEDIATE PHASE	Ingestion of fruits and vegetables	Wash all produce, or impound produce, delay harvest until approved, substitute uncontaminated produce
	Ingestion of water	Cut off contaminated supplies, substitute from other sources, filter, demineralize
(30 hours to 30 days)*	Whole body exposure and inhalation	Relocation, decontamination, access control
3 LONG TERM PHASE (over 30 days)*	Ingestion of food and water contaminated from the soil either by resuspension or uptake through roots	Decontamination, condemnation, or destruction of food; deep plowing, condemnation, or alternate use of land
	Whole body exposure from deposition material or inhalation of resuspended material	Relocation, access control, decontamination, fixing of contamination, deep plowing

1 Emergency phase - Time period of major release and subsequent plume exposure.

2 Intermediate phase - Time period of moderate continuous releases with plume exposure and contamination of environment.

3 Long Term Phase - Recovery period.

*"Typical" Post-accident time periods.

+Reference: USEPA "Manual of Protective Actions Guides and Protective Actions for Nuclear Incidents," 1975.

6.3.2 Notification of the Public

The capability exists for the prompt notification of the general public within the plume exposure pathway emergency planning zones for Commonwealth Edison Company operating units. This notification capability consists of two principal elements: (1) the Prompt Notification Systems (PNS) and (2) the Emergency Broadcast System (EBS) radio stations. Information describing these two systems is contained in the public information brochure.

The Prompt Notification System (PNS) consists of fixed sirens and vehicles with public address (PA) systems. The Emergency Broadcast System (EBS) is a network of local radio stations prepared to transmit or relay emergency information and instructions from the civil authorities to the general public. The public information brochures instruct the public to go indoors and turn on their radios when they hear the PNS sirens operating; these brochures also identify which local radio stations the public should tune to for information related to the emergency. The public information brochures are distributed annually to all residents of the plume exposure pathway EPZs and are further discussed in Section 8.4.

Activation of the PNS sirens by the civil authorities will alert the public to turn on their radios to a local EBS radio station for detailed information on the emergency situation. At the same time the emergency service vehicles being deployed by local authorities will be broadcasting messages on their P.A. systems also advising the public to tune to the local EBS radio stations or to take specific protective actions. The activation of the PNS sirens, deployment of emergency service vehicles and operation of the Emergency Broadcast System is discussed in detail in the Illinois Plan for Radiological Accidents. A more site-specific description of the various prompt public notification systems is presented in the station-specific annexes to the GSEP.

The PNS is operated by local governmental agencies and maintained by Commonwealth Edison. To assure the PNS is maintained in an operational readiness posture the local agencies have agreed to test the system (by sounding the sirens) monthly and to report inoperable equipment to TSN-designated maintenance personnel. The goal of the maintenance program is to render the inoperable equipment functional as soon as possible but definitely within one month. In addition to this non-routine repair program the PNS will be routinely tested and serviced on a semi-annual basis.

6.3.3 Implementation of Offsite Protective Measures

State and local governments have the responsibility to coordinate actions taken to protect the public during emergency situations. Refer to State and local emergency response plans for protective action information for offsite areas. (Also refer to Sections 4.7, 4.8, and 4.9 of this plan).

Time estimates for evacuation of the plume exposure EPZ surrounding each Commonwealth nuclear station appear in each site specific annex. These evacuation time estimates may be used by the Environmental/Emergency Coordinator as an aid in determining the recommended protective action for the offsite public (i.e., sheltering or evacuation).

The Illinois Emergency Services and Disaster Agency (ESDA) and Department of Nuclear Safety (DNS) are responsible for evaluation of Commonwealth Edison Company recommended protective actions and preparing a State recommendation to the Governor, or his appointed agent. Similar concepts apply in Iowa and Wisconsin. Only when the State acts under the Governor's order does a recommended protective action become a directed protective action.

GSEP Figure 6.3-1 and Table 6.3-1 suggest a series of protective actions as a function of the conditions of radioactive release. This figure and table agrees with the Illinois Plan for Radiological Accidents and is consistent with Appendix 1 of NUREG-0654. Bad road conditions and other serious offsite conditions might alter the recommendations, as would information from the evacuation time estimates.

6.3.4 Guidance for Recommending Re-entry into Evacuated Areas

If the plant conditions are stable and offsite radiological conditions are such that the public health and safety are not endangered then re-entry to evacuated areas may be recommended. This recommendation shall be transmitted via the NARS reporting system to State authorities.

The recommendation shall be made by the highest acting authority within the Commonwealth Edison GSEP organization.

If the shelter/evacuation recommendation was based upon an actual plant uncontrolled release, then this release must have terminated and the offsite dose equivalents reduced to an acceptable level. This acceptable level should be based upon actual field measurements prior to recommendation of a Re-entry Action .

The following conditions are guidelines for recommendation of the Re-entry Action. Recommendation of this action will be at the discretion of the Recovery Manager/Corporate Command Center Director/Station Director based upon input from the EOF/CCC/TSC staff and/or other appropriate organization knowledgeable of the conditions.

A recommendation of a Re-entry Action is for areas that were previously sheltered and/or evacuated. Some of the conditions to be considered prior to making a recommendation are:

1. Has the health and safety of the public been adequately considered?

2. Has the plant parameter, and/or equipment that caused the sheltering and/or evacuations been stabilized and adequately controlled?

3. Have any uncontrolled releases been terminated?

4. Has the environment been monitored?

5. Have effluent monitors returned to acceptable levels?

6. Have unacceptable environmental areas been identified, controlled and monitored?

7. Have contaminated areas requiring shelter/evacuation been returned to acceptable levels?

8. Has CECo provided necessary plant status to Federal, State and local officials such that they can evaluate the possibility of a Re-entry Action?

9. Are there any conditions existing either in the plant and/or environment that would cause a recommendation of shelter and/or evacuation?

10. Are there any conditions that would prevent the recommendation of a Re-entry Action?

The highest level of acting GSEP Organization authority shall make the recommendation of a Re-entry Action for the environment, to Federal, State and local authorities. It is the responsibility of these authorities to evaluate the CECo recommendation and consider their own analysis of the emergency condition prior to advising the public on an acceptable course of action.

6.4 Protective Actions for Onsite Personnel

During an emergency situation the Station Director has the responsibility to provide for protective actions for ALL onsite personnel. Protective actions to be considered for these personnel may be in the form of "Protective Equipment and Supplies", "Personnel Assembly", "Personnel Evacuation" or "Contamination Control".

6.4.1 Protective Cover Use of Protective Equipment and Supplies for personnel

During the course of an emergency, protective actions shall be considered to minimize the effects of radiological exposures or contamination problems associated with all onsite personnel. For those who must work within the restricted area of the affected site, measures that shall be considered are:

1) Distribution of respirators;

2) Use of protective clothing; and

3) Use of thyroid blocking agents.

The criteria for issuance of respiratory protection and protective clothing are described in "Commonwealth Radiation Protection Standards" and/or site specific radiation/chemistry procedures.

The use of thyroid blocking agents may be recommended when a projected dose of 25 rem is exceeded for a worker's thyroid. This is the value recommended by "Potassium Iodide as a Thyroid Blocking Agent in a Radiation Emergency: Final Recommendations on Use" Federal Register, Vol. 47, No. 125, June 29, 1982. The Commonwealth Medical Director is responsible for maintaining a supply of thyroid blocking agents within the company and for establishing the specific policy for its use.

6.4.2. Personnel Assembly

During an emergency situation the Station Director may initiate an assembly of all personnel within the security "Protected Area". The purpose of an assembly is to account for all personnel inside the security "Protected Area", and to assemble emergency personnel at prearranged locations.

A site assembly may be initiated whenever:

1) It is determined that dose equivalent or projected dose equivalent can be avoided by relocation of personnel to the site assembly area. (All nuclear stations have a given system to signal personnel to assemble to previously designated areas.)

2) If it is determined by the Station Director that other dangers exist that present a threat to the health and safety of onsite personnel.

3) A Site Emergency or General Emergency is declared, if not previously initiated.

If it is determined that the prearranged assembly area unfit for personnel, the Station Director may designate an alternative site assembly area and assemble personnel using appropriate communication systems that are available.

When an assembly of onsite personnel is determined necessary by the Station Director then accountability of all personnel within the protected area shall occur and shall be completed within thirty (30) minutes.

6.4.3 Personnel Evacuation

If it is determined that projected doses can be avoided by a relocation of personnel, or other dangers exist that present a threat to the health and safety of personnel inside the "Protected Area" or inside the "Site Boundary" an evacuation may be initiated at any time during the emergency.

6.4.3.1 Personnel inside the Protected Area

After assembly/accounting of personnel within the Protected Area has been completed, evacuation of non-essential personnel shall commence in accordance with Station procedures as directed by the Station Director or his designee, unless one of the following conditions exist:

a) severe weather conditions threaten safe transport;
b) a significant radiological hazard would be encountered;
c) there is a security threat occurring which would have an adverse impact on the personnel while leaving the site;
d) a condition similar to these in magnitude which in the opinion of the Station Director, CCC Director, or Recovery Manager would adversely affect the site personnel.

Regardless of who is to be evacuated the offsite evacuation recommendations shall be considered prior to personnel leaving the Protected Area.

6.4.3.2 Personnel inside the "Site Boundary"

Each station shall identify locations where people might be expected to be present outside the Protected Area but within the owner controlled area called the "Site Boundary". In addition, provisions shall be established for notification and subsequent evacuation of personnel within the "Site Boundary". Personnel within the Site Boundary will be judged by the appropriate GSEP Directors as essential or non-essential personnel. Evacuation of non-essential personnel will be performed at the Site or General Emergency levels, as conditions permit.

6.4.4 Contamination Control

During an emergency, the Station Director is responsible for preventing or minimizing direct or subsequent ingestion exposure to radioactive materials deposited on the ground or other surfaces. Commonwealth Radiation Protection Standards are to be considered by the Station Director as general methods to be used in contamination control.

6.5 Aid to Affected Onsite Personnel

6.5.1 Emergency Personnel Exposure

Being licensed by the Nuclear Regulatory Commission, all Commonwealth nuclear stations maintain personnel exposure control programs in accordance with 10 CFR 20. The Commonwealth Edison Radiation Protection Standards include guidance that should be used for limiting personnel exposures under emergency conditions. Whenever possible, the prior approval of the Station Superintendent, the Commonwealth Medical Director, and/or the Station's Radiation Protection Supervisor should be secured before exposing individuals to dose equivalents beyond 10 CFR 20 limits. In addition to the guidance of the Commonwealth Edison Radiation Protection Standards, emergency personnel exposures shall be limited to the recommendations of the U.S. Environmental Protection Agency as follows:

1) Emergency Workers - This applies to conditions where it is desirable to enter an emergency area to protect facilities, eliminate serious unplanned release of effluents, or to control fires.

   a) Planned whole body dose equivalent shall not exceed 25 rems;

   b) Planned dose equivalent to the thyroid shall not exceed 125 rems.

2) Life Saving Actions - This applies to search for and removal of injured persons or entry to the emergency area to prevent conditions that would injure other people.

   a) Dose equivalent to the whole body shall not exceed 75 rems;

   b) No limit for the thyroid since total loss of thyroid function could be allowable.

"The emergency limits outlined in this section shall be voluntary and, if received, be limited to once in a lifetime."

6.5.2 Decontamination and First Aid

6.5.2.1 General

There are no resident physicians, nurses, or industrial hygienists on the staff of Commonwealth's generating stations. However, the radiation protection personnel at each nuclear station are experienced in control of radioactive contamination and decontamination work. The radiation protection personnel and certain supervisors are also trained and qualified to administer first aid. These individuals are annually retrained in first aid by the station training staff. At least one of these individuals is available on shift at all times.

The functions of station personnel in handling onsite injured people are:

1) afford rescue;

2) administer first aid including such resuscitative measures as are deemed necessary;

3) begin decontamination procedures; and

4) arrange suitable transportation to a hospital when required.

6.5.2.2 Initial First Aid

Primary attention shall be directed to the actual factors involved in the treatment of casualties, such as: control of bleeding, resuscitation including heart and lung, protection of wounds from bacterial or radioactive contamination and the immobilization of fractures.

6.5.2.3 Decontamination

Nuclear Station radiation protection personnel shall provide an initial estimate of the magnitude of surface contamination of the injured and preliminary estimates of total body dose to the injured. Directed by radiation protection personnel, the station should carry out primary rapid and simple decontamination of the surface of the body when possible and advisable before transportation of the injured to a designated hospital.

6.5.3 Medical Transportation

Arrangements are made by each nuclear generating station for prompt ambulance service for transporting persons with injuries involving radioactivity from the respective generating station to designated hospitals. Such service is available on a 24-hour per day basis and is confirmed in writing. Radiation monitoring services shall be provided by Commonwealth whenever it becomes necessary to use the ambulance service for the transportation of contaminated persons.

Injured persons shall be transported to a hospital or other medical facility in a prudent and timely manner. Those persons contaminated with radioactive material shall be taken to the designated hospital and be accompanied by a person qualified in radiation monitoring techniques.

6.5.4. Medical Treatment

6.5.4.1 Hospital Facilities

Arrangements, confirmed in writing every two (2) calendar years, are maintained by Commonwealth with a qualified hospital located in the vicinity of each nuclear generating station for receiving and treating of contaminated or exposed persons. Such nearby hospital facilities shall be utilized for decontamination and initial treatment of persons with injuries involving radioactivity and requiring immediate hospital care. Commonwealth shall provide medical consultants to aid in any special care necessary at these facilities.

Arrangements, confirmed in writing every two (2) calendar years, are also maintained by the corporate office with a qualified major medical facility well equipped and staffed for dealing with persons having radiation injuries and whenever necessary, such persons will be transferred to this major hospital facility for extended specialized treatment. Currently, Northwestern Memorial Hospital in Chicago, Illinois serves as this hospital. Commonwealth will have available to the staff of this hospital its specialist who will provide the direction of the special care necessary for the treatment of persons having radiation injuries.

6.5.4.2 Radiological Medical Consultants

Because of the specialized nature of the diagnosis and treatment of radiation injuries, Commonwealth's corporate medical office maintains a roster of physicians especially competent in this area of medicine and available for the

care of persons with these special problems. Included in this roster are experts in the treatment of internal contamination, cutaneous radiation injury, total body irradiation and other potential problems related to exposure by ionizing radiation or radioactive materials.

These specialists may be in direct charge of the care of these patients or serve as consultants to other physicians in charge of their care.

7.0 EMERGENCY FACILITIES AND EQUIPMENT

7.1 Emergency Control Centers

7.1.1 Station Control Room

The nuclear station Control Room shall be the initial onsite center of emergency control. Control Room personnel must evaluate and effect control over the initial aspects of an emergency and initiate activities necessary for coping with the initial phases of an emergency until such time that support centers can be activated. These activities shall include:

- o Continuous evaluation of the magnitude and potential consequences of an incident;
- o Initial corrective actions; and
- o Notification of appropriate individuals as outlined in Section 6.0 of this plan.

Support centers provided are the Technical Support Center, Operational Support Center, Corporate Command Center, and Emergency Operations Facility.

7.1.2 Technical Support Center (TSC)

Each nuclear generating station has established a Technical Support Center (TSC) for use during emergency situations by plant management, technical, and engineering support personnel. When activated during an emergency, the TSC shall be manned by sufficient personnel to:

- o Support the Control Room command and control function;
- o Assess the plant status and potential offsite impact; and
- o Coordinate emergency response actions.

Staffing of the TSC shall be directed by the Station Director. Reporting initially to the TSC for the Site and General Emergencies shall be all directors of the Station Group, i.e., the Station Director, Operations Director, Technical Director, Maintenance Director, Stores Director, Administrative Director, Security Director, and Rad/Chem Director. (The Shift Engineer when acting as initial Station Director shall not report to the TSC). Other personnel may augment the TSC staff upon approval of the Station Director.

Each TSC provides reliable voice communications to the Control Room, the OSC, the EOF, the CCC, the NRC, and State and local operations centers. In addition, they provide facsimile transmissions capability to the EOF and the NRC Operations Center.

Each TSC is in proximity to the Control Room and is sized for a minimum of 25 persons and supporting equipment. Of the 25 persons, five shall be reserved for the NRC and one person shall be available for the State of Illinois. At Quad Cities and Zion Stations, an additional slot per station will be held for a contiguous state representative.

Personnel in the TSC shall be protected from radiological hazards, including direct radiation and airborne contaminants under accident conditions with similiar radiological habitability as Control Room personnel. To ensure adequate radiological protection, permanent radiation monitoring systems have been installed in the TSC. These systems continuously indicate radiation dose rates and airborne radioactivity inside the TSC while in use. In addition, protective breathing apparatus (full face air purifying respirators) and thyroid blocking agents are available for use as required.

The TSC has access to a complete set of as-built drawings and other records, including general arrangement diagrams, P&IDs, and the electrical schematics. The TSC has the capability to record and display vital plant data, in real time*, to be used by knowledgeable individuals responsible for engineering and management support of reactor operations, and for implementation of emergency procedures.

7.1.3 Operational Support Center (OSC)

Each nuclear generating station has established an Operational Support Center (OSC). The OSC is the location to which operations support personnel should report during an emergency and from which they will be dispatched for assignments or duties in support of emergency operations. Personnel who may report to the OSC include:

- o OSC Director
- o Operating personnel not assigned to the Control Room;
- o Radwaste personnel
- o Rad/Chem Technicians
- o Maintenance personnel

The Operations Director shall designate an individual to become the OSC Director, if not already appointed by the Shift Engineer. This person will manage and supervise the activities of the OSC. The OSC shall be activated whenever the TSC is activated , but need not remain activated at the Alert level if its use is judged unnecessary by the Station Director. At the Site and General Emergency levels the OSC or an alternate OSC shall be activated at all times.

A limited inventory of supplies will be kept in the OSC. This inventory will include respirators, protective clothing, portable lighting, and portable survey instruments.

Each OSC is equipped with a dedicated direct voice communication line to the Control Room and normal station telephone access to the TSC and the EOF so that personnel reporting to the OSC can be assigned to duties in support of emergency operations.

* This system will not be fully operable at all stations as described until the stations are equipped with new plant process computers, and the software programs are fully developed. Reference the CECo April 1983 response to NUREG 0737 Supplement 1 or latest submitted schedule for planned operational dates.

7.1.4 Corporate Command Center (CCC)

The Corporate Command Center located in the Edison Building, Chicago, Illinois is the location from which the Corporate Command Center Director will normally direct a staff in evaluating, coordinating, and directing the overall company activities involved in coping with an emergency. If the Recovery Group is activated at the EOF, then the CCC shall be the location for a support staff reporting to the EOF Recovery Group.

In addition to the above functions, the CCC Environmental Director shall support TSC/EOF environmental activities.

7.1.5 Emergency Operations Facility (EOF)

The Emergency Operations Facility (EOF) is the location near the generating station that provides for the management of overall emergency response, the coordination of radiological and environmental assessments, the determination of recommended public protection actions, the management of recovery operations, and the coordination of emergency response activities with Federal, State, and local agencies. The EOF and associated Recovery Group function under a Recovery Manager and are activated for all Site and General Emergency situations. Activation for other emergency conditions is optional.

There shall be three major groups of emergency control personnel functioning at each EOF. They are (1) Recovery personnel; (2) Environmental Control personnel; and (3) Emergency News personnel. Refer to Figure 7.1-1.

Recovery personnel function under the direction of the Recovery Manager and serve as the command post for direction of all recovery operations.

Environmental Control personnel are under the direction of the Environmental/Emergency Coordinator and function to evaluate emergency situations that affect the public.

Emergency News personnel operate from the Emergency News Center, which is under the direction of the Emergency News Center Director and functions as the single-point contact to interface with Federal, State, and local authorities who are responsible for disseminating information to the public. A technical spokesperson will be chosen by the Recovery Manager. This spokesperson will be knowledgeable about the affected station and its operation and will have the authority and responsibility to discuss technical problems associated with the emergency. The spokesperson shall be available to brief the press at the Joint Public Information Center.

The four primary EOFs (Mazon EOF to serve Dresden, Braidwood and LaSalle County Stations, Dixon EOF for Byron Station, Morrison EOF for Quad Cities Station, and Zion EOF for Zion Station) are constructed according to the design criteria such that:

1) The location provides optimum functional and availability characteristics for carrying out overall strategic direction of CECo onsite and support operations, determination of public protective actions to be recommended to offsite officials, and coordination with Federal, State and local organizations.
2) They are well engineered for the design life of the plant and are of sufficient size to accommodate about 50 people. The Zion Station EOF, because of its close proximity to the station, is provided with additional radiological protection features.
3) They are equipped with reliable voice communications facilities to the TSC, the OSC, the CCC, the Control Room, NRC, and State and local emergency operations centers. In addition, each EOF has facsimile transmission capability to any other EOF, to all TSC's, and the NRC Operations Center.
4) Equipment is provided to gather, store, and display data needed in the EOF to analyze and exchange information on plant conditions with the designated senior CECo manager in charge of the TSC.
*5) The EOF technical data system receives, stores, processes, and displays information sufficient to perform assessments of the actual and potential onsite and offsite environmental consequences of an emergency condition.
6) They have ready access to plant records, procedures, and emergency plans needed to exercise overall management of CECo emergency response resources.

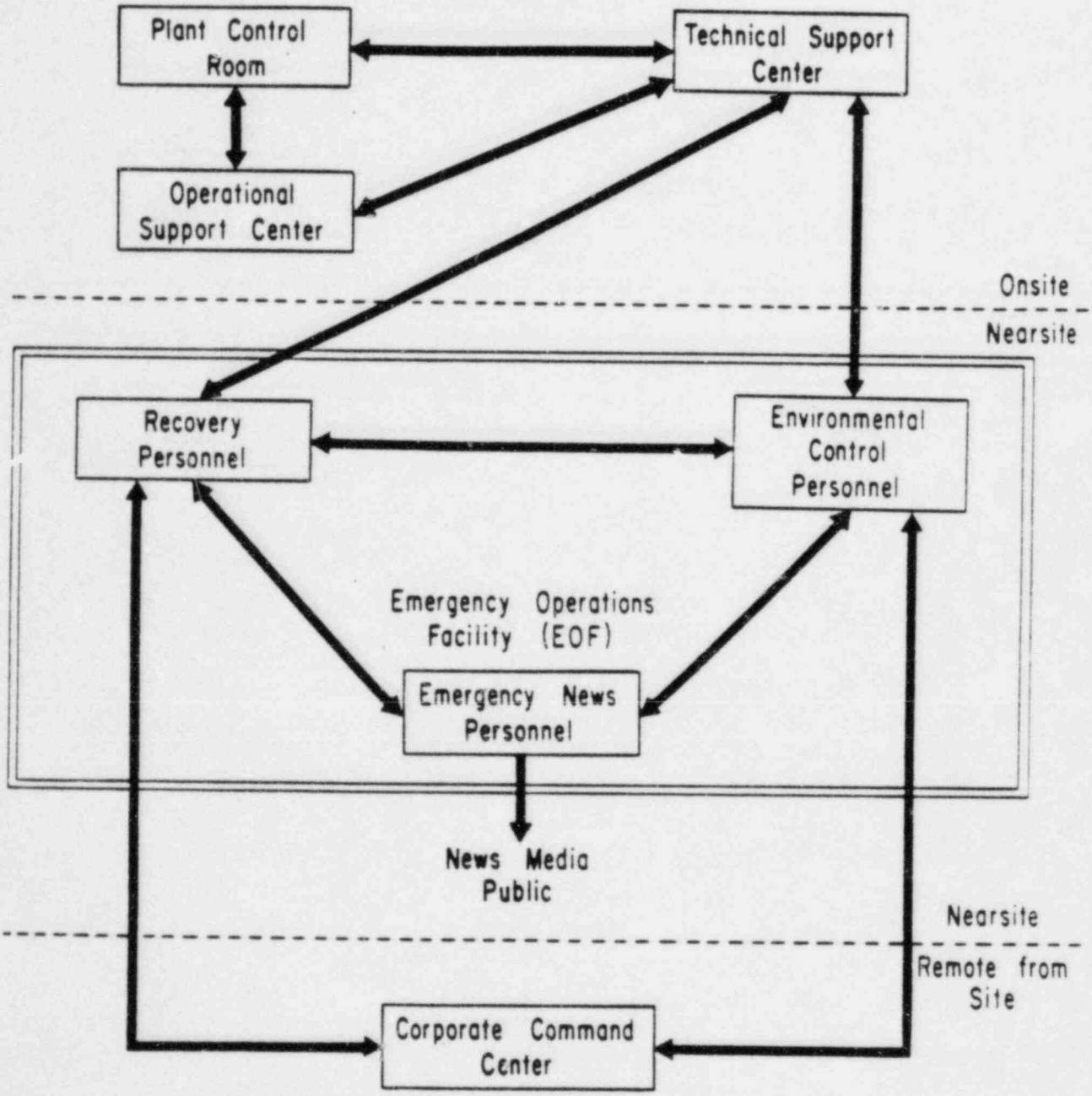
The Zion BEOF is constructed according to the design criteria in a portion of the Lake County Emergency Operations Center at a distance of 15 miles from the Zion plant. The facility is equipped with reliable communication and appropriate dose projection computer equipment, which provide for continuity of decision making capability.

* This system will not be fully operable at all stations as described until the stations are equipped with new process computers, and the software programs are fully developed. Reference the CECo April 1983 response to NUREG 0737 Supplement #1 or latest submitted schedule for planned operational dates.

FIGURE 7.1-1

COMMONWEALTH EMERGENCY CONTROL CENTERS & COMMUNICATIONS FLOW

(For a full response situation)



Note: The EOF has three defined functional centers. Space limitations of individual EOFs may not allow separate physical rooms for each "center"

7.2 Communication Systems

Commonwealth has extensive and reliable communication systems installed at its generating stations, system power supply office, corporate headquarters, and Division load dispatching offices. These systems include the use of normal and dedicated telephone lines on land lines and microwave voice channels, mobile radio units, handi-talkies, and computer peripherals.

For the purposes of GSEP communications, the system is addressed in terms of functional areas as described in the following sections.

7.2.1 Nuclear Accident Reporting System (NARS)

The Nuclear Accident Reporting System is a dedicated telephone voice communications system that has been installed for the purpose of notifying State and local authorities of declared nuclear emergencies. This system links together the station Control Rooms, the Corporate Command Center, Technical Support Centers, System Power Supply Office, Emergency Operations Facilities, and State and local authorities as appropriate. (See Figure 7.2-1).

Except for special circumstances involving the Recovery Manager and directors of certain state agencies (ESDA, DNS, ODS, DEG) all NARS messages (Figure 7.2-2) shall be reported in the format of the current NARS form. The format and content of the NARS form must be mutually agreed to by the Directors of ESDA and DNS and the Technical Services Nuclear Manager before its use. The NARS form is a State of Illinois form included in the GSEP to aid the reader in understanding the reporting concept. This form is <u>not</u> subject to onsite/offsite review.

The State of Illinois Emergency Services & Disaster Agency, in cooperation with Commonwealth Edison, is responsible for the development and execution of all steps necessary to ensure continuous operation of the NARS.

7.2.2 Communications for Command and Control

Commonwealth has established four separate dedicated communication systems that ensure reliable and timely exchange of information necessary to provide effective command and control over any emergency response. These systems include:

- A microwave voice channel between the Corporate Command Center and the Shift Engineer's Office, the TSC, and the EOF at each nuclear station. (Gray phone)
- A telephone link that enables communication between the Corporate Command Center, the TSC, and the EOF. (Yellow phone)

- o A telephone link that enables communication between the Control Room and the TSC. (Non-color coded)

- o A telephone link that enables communication between the Control Room and the OSC. (Non-color coded)

Refer to Figure 7.2-3 for a more descriptive representation of the above systems.

7.2.3 Environmental Assessment Communications

Two separate communication systems have been installed to allow coordinated environmental monitoring and assessment during an emergency.

The first system consists of the necessary hardware to allow communication between the Corporate Command Center, the Control Room, the TSC, the EOF mobile units in Commonwealth vehicles, and handi-talkies held by environmental monitoring teams in the field. The radio system has scramble and non-scramble capability to prevent monitoring by non-company equipment.

The second system consists of a dedicated telephone which allow continuous communication between the Corporate Command Center and the Illinois Department of Nuclear Safety REAC in Springfield. Refer to Figure 7.2-4.

7.2.4 NRC Communications

There exists a dedicated telephone, Emergency Notification System (ENS), between each nuclear station's Control Room and the NRC, with an extension of that line in the Technical Support Center and Emergency Operation Facility. There also exists a separate dedicated telephone, Health Physics Network (HPN), between the NRC and the Radiation Protection Office at each nuclear station (See Figure 7.2-5). The actual configuration of these systems may vary from station to station. Installation and use of the NRC phones is under the direction of the NRC.

7.2.5 NAWAS

The Wisconsin National Warning System (NAWAS) network is available at the locations shown on Figure 7.2-1. The NAWAS is used to provide the initial notification of a reportable incident at the Zion Station to the State of Wisconsin and to Wisconsin Warning Center I located at the Wisconsin State Police Patrol District Headquarters in Madison, which is responsible for off-hours contact of the Wisconsin Duty Officer. NAWAS is used for initial contact only. Details of the initial report and subsequent changes in status shall be provided to Wisconsin officials by other communications.

NUCLEAR ACCIDENT REPORT SYSTEM (NARS)

Selection of a predetermined code rings selected phones. The NARS phones are color coded GREEN.

DIAL CODE	NAME	LOCATION
20		
	*Dept. Nuclear Safety	Springfield
	*Illinois ESDA	Springfield
	*System Power Supply	Lombard
22	DRESDEN	
	*Dresden Control Room	Morris
	*Tech.Support Center	Morris
	*Dresden E.O.F.	Morris
	Grundy County Sheriff	Morris
	Grundy County E.S.D.A.	Morris
	Will County E.S.D.A.	Joliet
	*Dept. Nuclear Safety	Springfield
	*System Power Supply	Lombard
	*Corporate Command Ctr.	Chicago
	*Illinois ESDA	Springfield
	Kendall Co. Sheriff	Yorkville
23	QUAD CITIES	
	*Quad Cities Control Rm.	Cordova
	*Tech Support Center	Cordova
	*Quad Cities E.O.F.	Cordova
	Rock Island Communica	Rock Island
	Rock Island Co. ESDA	Rock Island
	*Iowa Disaster Services	Des Moines, IA
	*Scott County Sheriff	Davenport, IA
	*Clinton County E.O.C.	Clinton, IA
	Whiteside Co. Sheriff	Morrison
	Whiteside Co. E.S.D.A.	Morrison
	*Dept. Nuclear Safety	Springfield
	*System Power Supply	Lombard
	*Corporate Command Ctr.	Chicago
	*Illinois ESDA	Sprinfield
24	ZION	
	+*Zion Control Room	Zion
	*Tech Support Center	Zion
	*Zion EOF	Zion
	Zion Police Dept.	Zion
	Community Coord. Ctr.	Libertyville
	Lake County Sheriff	Waukegan
	+Kenosha Co. Wrn. Center	Kenosha, WI
	+*Wisconsin D.E.G.	Madison, WI
	+Waukesha Center	Waukesha, WI
	*Dept. Nuclear Safety	Sprinfield
	+*System Power Supply	Lombard
	*Corporate Command Center	Chicago
	*Illinois ESDA	Springfield
	Winthrop Harbor Police	Winthrop Harbor

DIAL CODE	NAME	LOCATION
25	LASALLE	
	*LaSalle Control Room	Seneca
	*Tech Support Center	Seneca
	*LaSalle E.O.F.	Seneca
	LaSalle County Sheriff	Ottawa
	LaSalle Co. ESDA	Ottawa
	Grundy County Sheriff	Morris
	Grundy County ESDA	Morris
	*Dept. Nuclear Safety	Springfield
	*System Power Supply	Lombard
	*Corporate Command Ctr	Chicago
	*Illinois ESDA	Springfield
33		
	*Dept. Nuclear Safety	Springfield
	*Iowa Disaster Serv.	Des Moines
	*Illinois ESDA	Springfield
	*System Power Supply	Lombard
34		
	Whiteside Co. Sheriff	Morrison
	Whiteside Co. ESDA	Morrison
	Rock Island Comm.	RockIsland
	Rock Island Co. ESDA	RockIsland
	*Illinois ESDA	Springfield
35		
	*Dept. Nuclear Safety	Springfield
	*Wisconsin D.E.G.	Madison,WI
	*Illinois ESDA	Sprinfield
	*System Power Supply	Lombard
36		
	Dewitt Co. Sheriff	Clinton,IL
	Dewitt Co. ESDA	Clinton,IL
	*SESDA IL. ESDA	Springfield
37		
	*Byron Control Room	Byron
	*Tech Support Center	Byron
	*Dixon EOF	Dixon
	*Illinois ESDA	Springfield
	*Ill. DNS	Springfield
	+*System Power Supply	Lombard
	*Corporate Command Ctr	Chicago
	Ogle County Sheriff/ESDA	Oregon

*-DIAL CAPABILITY
+-NAWAS

MESSAGE RECEIVED

TIME _____ DATE _____

STATE OF ILLINOIS
NUCLEAR ACCIDENT REPORTING SYSTEM FORM

1. STATUS
- [A] ACTUAL
- [B] EXERCISE/ DRILL/ TEST

2. SITE-IPRA VOL. #
- [A] DRESDEN II
- [B] LASALLE III
- [C] QUAD CITIES IV
- [D] ZION V
- [E] BYRON VI
- [F] CLINTON VII
- [G] BRAIDWOOD VIII

3. ACCIDENT CLASSIFICATION EAL #
- [A] TRANSPORTATION ACCIDENT
- [B] UNUSUAL EVENT ____
- [C] ALERT ____
- [D] SITE AREA EMERGENCY ____
- [E] GENERAL EMERGENCY ____
- [F] RECOVERY
- [G] TERMINATE CONDITION
- [H] OTHER _____

4. RELEASE STATUS
- [A] NONE
- [B] POTENTIAL
- [C] OCCURRING
- [D] TERMINATED

5. TYPE OF RELEASE
- [A] RADIOACTIVE GAS
- [B] RADIOACTIVE LIQUID
- [C] NO RELEASE
- [D] UNKNOWN

6. INCIDENT OCCURRED

TIME _____ DATE _____

7. ACCIDENT CLASSIFIED

TIME _____ DATE _____

8. WIND DIRECTION DATA (Check one, Read across)

	WIND FROM	DEGREES	WIND TOWARD	SECTORS AFFECTED
[A]	N	349-11	S	H J K
[B]	NNE	12-33	SSW	J K L
[C]	NE	34-56	SW	K L M
[D]	ENE	57-78	WSW	L M N
[E]	E	79-101	W	M N P
[F]	ESE	102-123	WNW	N P Q
[G]	SE	124-146	NW	P Q R
[H]	SSE	147-168	NNW	Q R A
[I]	S	169-191	N	R A B
[J]	SSW	192-213	NNE	A B C
[K]	SW	214-236	NE	B C D
[L]	WSW	237-258	ENE	C D E
[M]	W	259-281	E	D E F
[N]	WNW	282-303	ESE	E F G
[O]	NW	304-326	SE	F G H
[P]	NNW	327-348	SSE	G H J

9. RECOMMENDED PROTECTIVE ACTIONS:

[A] NOT APPLICABLE (INITIAL NOTIFICATION FOR INFORMATION ONLY)

[B] PREPARE FOR POSSIBLE ACTION INVOLVING THE PUBLIC, TO INCLUDE NOTIFICATION

[C] NOTIFY PUBLIC TO TAKE THE FOLLOWING PROTECTIVE ACTIONS:

IN ILLINOIS	SHELTER	EVACUATE	IN WISCONSIN/IOWA
0-2 MILE RADIUS	[D]	[H]	0-2 MILE RADIUS
0-5 MILE RADIUS	[E]	[I]	0-5 MILE RADIUS
2-5 MILES FOR THREE (3) DOWNWIND SECTORS	[F]	[J]	2-____(R) MILES
5-10 MILES FOR THREE(3) DOWNWIND SECTORE	[G]	[K]	____(R) TO 10 MILES (R IS THE RANGE EQUAL TO THE PAG DOSE.)

[L] DISCONTINUE USE OF POTENTIALLY AFFECTED WATER IN _____ LOCATION(S)

[M] PUT MILK PRODUCING ANIMALS ON STORED FEED IN DOWNWIND SECTORS OUT TO _____ MILES.

---

10. MESSAGE REPORTED BY: _____ NAME OF CALLER

_____ ORGANIZATION _____ TELEPHONE NO.

11. NARS DIAL CODE USED BY SENDER ☐

12 MESSAGE RECEIVED BY: _____ YOUR NAME

13. MESSAGE VERIFIED BY: _____ NAME _____ TIME _____ ORGANIZATION

14. UTILITY DUTY OFFICER _____ NAME _____ TELEPHONE

C.E. CO. 86 2626 (S) 6 83

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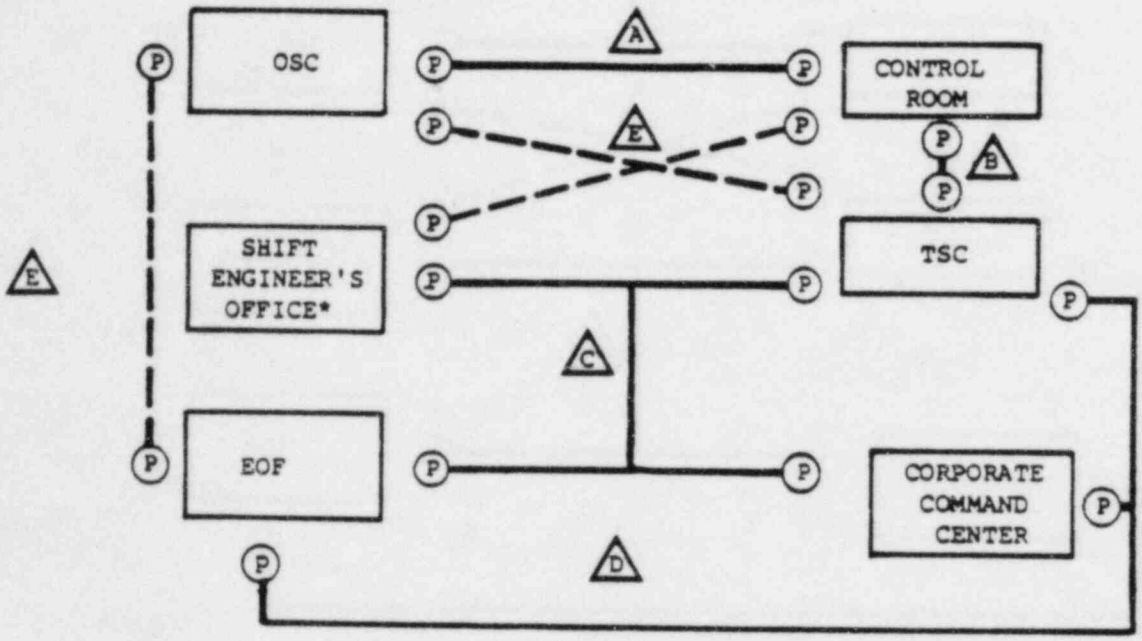
Figure 7.2-2

FIGURE 7.2-3

COMMUNICATIONS FOR COMMAND AND CONTROL



A — Telephone line between the OSC and Control Room. Color coding of this system is at the discretion of each nuclear station.

B — Telephone line between the Control Room and TSC. Color coding of this system is at the discretion of each nuclear station.

C — Microwave voice channel between the Corporate Command Center and the EOF, Shift Engineer's Office, and the TSC. Phone receivers are color-coded gray.

D — Telephone line between the EOF, Corporate Command Center, and TSC. Phone receivers are color-coded yellow.

E — Regular Station telephone line.

_____ dedicated

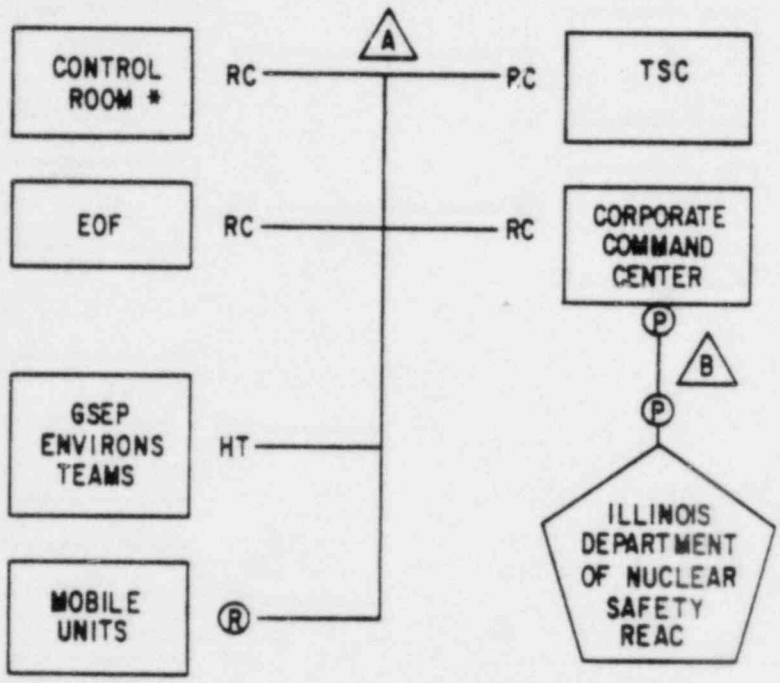
---------- regular

P Phone receiver

* At the discretion of each nuclear station, the gray phone for the Shift Engineer's Office may be placed in the Control Room.

FIGURE 7.2-4

ENVIRONMENTAL ASSESSMENT COMMUNICATIONS



(A) Microwave radio link between the Corporate Command Center, TSC, Control Room, EOF, GSEP environs teams, and mobile units.

(B) Telephone line between the Corporate Command Center and the Illinois Department of Nuclear Safety. Phone receiver is color-coded black.

RC Radio/console unit

HT Handi-talkie (153.590 MHz)

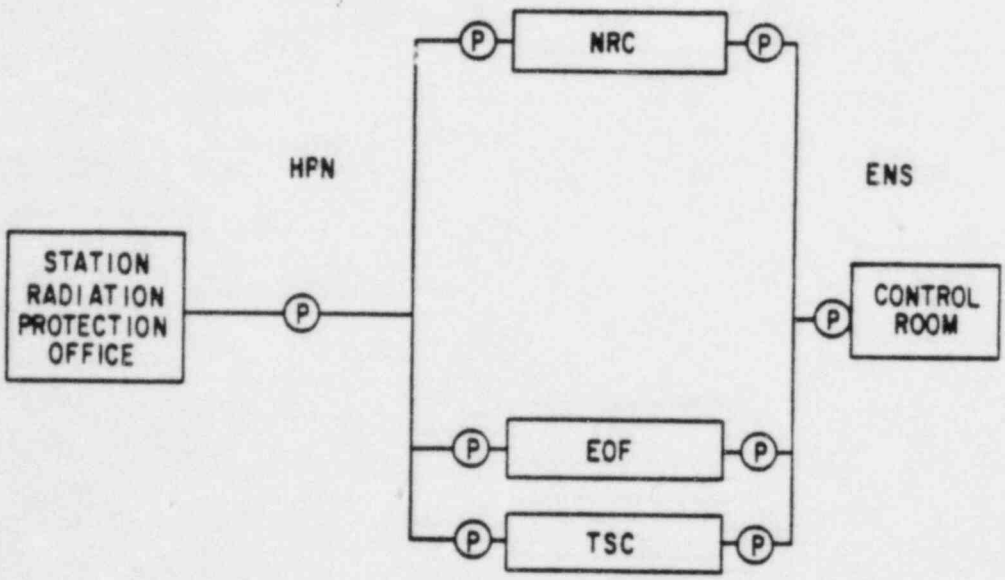
® Radio (153.590 MHz)

(P) Phone receiver

* At the discretion of each nuclear station, the radio console for the Control Room may be placed in the Shift Engineer's Office.

FIGURE 7.2-5

NRC COMMUNICATIONS



ENS: EMERGENCY NOTIFICATION SYSTEM; PHONE RECEIVERS ARE COLOR-CODED RED

HPN: HEALTH PHYSICS NETWORK; PHONE RECEIVER COLORS VARY FROM STATION TO STATION.

(P) PHONE RECEIVER

THE EXACT CONFIGURATION OF THE ABOVE SYSTEMS MAY VARY FROM ONE NUCLEAR STATION TO ANOTHER. INSTALLATION AND USE OF THE NRC PHONES ARE UNDER THE DIRECTION OF THE NRC.

7.3 Assessment Facilities

7.3.1 Onsite Systems, Instrumentation, and Equipment

Each nuclear station is equipped with instrumentation for seismic monitoring, radiation monitoring, fire protection, and meteorological monitoring. The actual instrumentation varies somewhat from site to site and thus will not be described in this generic plan. Descriptions of the above equipment will appear in each site specific annex. Instrumentation useful to the detection or analysis of emergency conditions shall be maintained in accordance with station Technical Specifications, if applicable, or commitments made to the NRC.

With regard to Commonwealth Edison's meteorological monitoring program, there has been a quality assurance program since 1976. The program was adopted from 10 CFR 50, Appendix B. However, since the meteorological facilities are not composed of structures, systems, and components that prevent or mitigate the consequences of postulated accidents and are thus not "safety related", not all aspects of 10 CFR 50, Appendix B apply. Those aspects of quality assurance germane to supplying good meteorological information for a nuclear power station were adopted into the meteorological quality assurance program.

7.3.2 Safety Parameter Display System (SPDS)*

The Safety Parameter Display System (SPDS) shall provide a display of plant parameters from which the safety status of operation may be assessed in the Control Room, TSC, and EOF for each nuclear station. The primary function of the SPDS is to help operating personnel in the Control Room make quick assessments of plant safety status. Duplication of the SPDS displays in the TSC, and EOF will promote the exchange of information between these facilities and the Control Room and assist management in the decision making process.

7.3.3 Offsite Dose Calculation System (ODCS)*

The Offsite Dose Calculation System (ODCS) is a computer based method for estimating the environmental impact of unplanned airborne releases of radioactive material from nuclear stations.

The objectives of the Commonwealth ODCS are:

- o Provide, where possible, redundant independent pathways of data transmission and redundant data processing computers for use in an emergency situation.

* This system will not be fully operable at all stations as described until the stations are equipped with new plant process computers, and the software programs are fully developed. Reference the CECo response to NUREG 0737 Supplement #1 or latest submitted schedule for planned operational dates.

- o Provide quick and reasonably accurate estimates of radiation dose equivalent to persons living offsite, including preparation of procedures and training of users required to accomplish this assessment.

- o Provide a method for the meteorological contractor to secure meteorological data for assessment of routine releases and to detect equipment failure quickly.

Each nuclear station's meteorological tower is frequently interrogated each day by the meteorological contractor to secure information necessary for preparation of meteorological operating reports and for detection of system failures.

Hourly, and more frequently during an accident, a corporate computer shall poll each meteorological facility to prepare the corporate data file and to check the system in order to maintain the ODCS in a readiness condition. The corporate computers shall then store the data for an extended time period.

At each nuclear station the plant computer will produce initial transport and diffusion estimates within 15 minutes following classification of an incident. The plant computer will produce refined estimates of dose equivalent as a terminal entry system to the corporate computer.

During an accident the plant computer system and a larger, corporate computer system will provide the various users with timely information required to make decisions. Emergency actions will be performed in the following sequence:

First - time frame: initial one-half hour or so post-accident - the control room operator will rely on wind speed and direction and effluent release rate information provided by the plant process computer and these data converted into requisite Emergency Action Levels (EALs) by the Class A computer model.

* The Class A model will provide warning to the Control Room operator when the following EALs have been exceeded: for Site Emergency: 2-minute average noble gas release rate having projected offsite dose rate of 500 mR/hr and 30-minute average noble gas release rate having projected offsite dose rate of 50 mR/hr, using worst case meteorology; and for General Emergency: 2-minute average noble gas release rate having projected offsite dose rate of 1000 mR/hr using 15-minute average actual meteorology.

second - 1/2 hour to few hours - emergency personnel should likely analyze the off-site consequences using the track model and C-model, both of which reside in the corporate computer and plant computer system.

third - few hours to duration of accident - the EOF environmental staff backed by a corporate environmental group will perform refined estimates of the offsite consequences for the duration of the emergency period. Computer models available for use include the A, B, C, and track models. This corporate group has been formed to support all nuclear stations and will perform its work in Chicago in lieu of having to relocate to each Emergency Operations Facility (EOF). A data link between the corporate facility and each EOF will be provided.

* This system will not be fully operable at all stations as described until the stations are equipped with new plant process computers, and the software programs are fully developed. Reference the CECo response to NUREG 0737 Supplement #1 or latest submitted schedule for planned operational dates.

7.4 Protective Facilities and Equipment

Each nuclear station has chosen locations to serve as both onsite assembly areas and offsite evacuation assembly areas. The specific locations of these areas are shown in each site specific annex.

7.5 First Aid and Medical Facilities

Each nuclear station maintains onsite first aid supplies and equipment necessary for the treatment of contaminated or injured persons. As described in Section 6.5.2 of this plan, no resident physicians, nurses, or industrial hygienists are on the staff of Commonwealth's generating stations, and as such, medical treatment given to injured persons is of a "first aid" nature. When more professional care is needed, injured persons are transported to a local clinic or hospital. Hospital facilities are discussed in Section 6.5.4 of this plan.

7.6 Damage Control Equipment and Supplies

The onsite storeroom of each nuclear station maintains a supply of parts and equipment for normal plant maintenance. These parts, supplies, and equipment are available for damage control use as necessary. When an emergency condition exists at one station, additional supplies can be obtained from other stations and from Division resources upon request.

7.7 Facilities and Equipment for Offsite Monitoring

Commonwealth Edison has contracted with a company (currently Teledyne Isotopes) to conduct an extensive offsite environmental monitoring program to provide data on measurable levels of radiation and radioactive materials in the environs. The program includes: fixed continuous air samplers; routine sampling of river water; routine sampling of milk; routine sampling of fish; and a fixed TLD monitoring network. The TLD program consists of the following elements at each nuclear station:

- A nearsite ring of dosimeters covering the 16 meteorological sectors.
- A 16 sector ring of dosimeters placed in a zone about 5 miles from the plant.
- TLDs placed at each of the normal fixed air sampler locations (typically about 8-15 air samplers per nuclear station).

Each nuclear station maintains a supply of emergency equipment and supplies which may be used for offsite monitoring. The actual equipment may vary somewhat form site to site and thus the specific listing of equipment appears in Station Emergency Plan Implementing Procedures. Table 7.7-1 lists the types of equipment and supplies. Sufficient supplies of emergency equipment shall be maintained in order to meet the initial requirements of two environmental sampling teams that would be dispatched for declared emergencies that involve releases of radioactive material to the environment. During subsequent phases of an emergency, equipment would be available from other Commonwealth Edison nuclear stations, vendors, and offsite response organizations.

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TABLE 7.7-1

OFFSITE
EMERGENCY MONITORING EQUIPMENT
FOR EACH NUCLEAR STATION

EQUIPMENT

A. Instrument Kit*

1. High range cutie-pie ion chamber (at least up to 50 R/hr)

2. GM survey meter (Beta-gamma) capable of measuring less than 0.2 mR/hr

3. Sample counting equipment capable of measuring radio-iodine concentrations in air in the plume exposure EPZ as low as 1E-07 uCi/cc under field conditions

4. Dosimetry:
   - o Film or TLD Badges
   - o 0-200 mR self-reading dosimeters
   - o High range self-reading dosimeters greater than or equal to 50 R
   - o Dosimeter charger

5. Instrument check sources

6. Air Sampling Equipment:
   - o Portable air sampler operated either with battery or portable generator
   - o Filters for air sampler
   - o Silver Zeolite Cartridges
   - o Tripod (or equivalent) for air sampler

B. Protective Clothing*

1. Coveralls (various sizes)
2. Gloves
3. Head Coverings
4. Shoe Covers
5. Plastic Suits
6. Boots
7. Full face respirators with combination filter/charcoal cartridges

---

* Actual quantities of listed items are established by each nuclear station.

TABLE 7.7-1 (CONT)

EQUIPMENT

C. Communications Equipment*

1. Handi-talkies on frequency of 153.590 MHZ with scramble capability. Note: These radios are probably not to be stored with the rest of the equipment listed in this table.

D. Sample Collection Kit*

1. Plastic Bags (various sizes)
2. Plastic Bottles (various sizes)
3. Masking Tape and Labels
4. Marking Pencil or Pen

E. Miscellaneous Supplies*

1. Spare Batteries
2. Radiation Signs, Radiation Rope or Ribbon
3. High Intensity Flashlights or Lanterns
4. Smears Pads
5. Shovel
6. Flares
7. Pocketknife
8. Ladder
9. Set of keys to Environs Stations
10. Screwdriver (Plain and Phillips)
11. Scissors
12. Teri Towels (or equivalent)
13. Stopwatch

F. Data Reference Kit*

1. Environmental Emergency Procedures (EG Series Procedures)
2. Emergency Log Book (for recording team activities)
3. Packet containing site and area maps, note pad, pencils or pens
4. Forms for recording timekeeping and/or dosimeter readings
5. Instrument Manuals

G. First Aid Kit*

* Actual quantities of listed items are established by each nuclear station.

8.0 MAINTAINING EMERGENCY PREPAREDNESS

8.1 Organizational Preparedness

8.1.1 Division Vice-President and General Manager, Nuclear Stations

The Division Vice-President and General Manager, Nuclear Stations has overall responsibility for radiological emergency response planning within Commonwealth Edison. This individual is also the primary designated Recovery Group Manager.

A staff assigned to the Division Vice-President and General Manager, Nuclear Stations, has the responsibility for development and updating of the GSEP and coordination of the GSEP with other response organizations. This staff is headed by the Supervisor of Emergency Planning.

All personnel designated as directors in the GSEP organization shall be appointed by the Division Vice President and General Manager, Nuclear Stations and documented by inclusion in the GSEP telephone directory listing of positions and personnel.

8.1.2 Station Superintendent

The Station Superintendent (or a designated alternate) has the responsibility to contact agencies with which the Station desires agreements for support during an emergency. This contact shall include:

1) An annual written invitation for members of these organizations to visit the station, discuss the emergency plan, and familiarize themselves with plant facilities; and personnel.

2) Annual written offer by the nuclear stations to provide radiological training or retraining to members of these organizations with respect to their role in the emergency plan (also see Section 8.2); and

3) Once every two years, a request shall be made for written confirmation of the availability of assistance from each supporting organization not already a party to the Illinois Plan for Radiological Accidents or the equivalent plans in Iowa and Wisconsin. Letters of agreement will be referenced in the site specific annex and the actual letters will be maintained on file at each station respectively. Letters of agreement shall, as a minimum, state that the cooperating organization will provide their normal services in support of an emergency at the affected station.

The Station Superintendent has the following additional responsibilities:

4) Ensure the operational readiness of station communication systems for use during an emergency, by verification during drills (see Section 8.3.2.1);

5) Ensure the operational readiness of emergency equipment and supplies, such as, the Environs Team equipment (See Table 7.7-1), the Environs Team Van (at Mazon/Dresden, Quad Cities, and Zion), the TSC (See Section 7.1.2), the OSC (See Section 7.1.3), and the equipment needed to classify an accident (See Sections 5.0, 7.3-1 and the EAL section of the GSEP Annex);

6) Ensure that Station EPIPs are prepared as described in section 9.2 and are reviewed every two years; and

7) Support the Supervisor of Emergency Planning in the maintenance of the EOF and Zion Back-up EOF, such as, maintenance of the health physics equipment stored there, and certain plant-related documents.

8.1.3 Medical Director

The Commonwealth Medical Director is responsible for obtaining, in accordance with Section 6.5.4, agreements for the services of physicians or clinics, and medical consultants specifically skilled in the medical aspects of radiation accidents and other medical consultants as might be necessary for the case of a person involved in a radiation incident.

The Medical Director is responsible for maintaining a supply of thyroid blocking agents within the company and for establishing policy for its use.

Following is Commonwealth Medical Director's policy regarding administration of Potassium Iodide (KI) as a thyroid blocking agent.

1. A dose of 130 mg KI (1 tablet) should be administered prior to receiving a projected calculated dose equivalent to the thyroid of 25 rem or greater, or

2. One tablet should be taken as soon as possible upon an individual being subjected for 1 hour to an airborne concentration of I-131 of 1.25×10^{-5} uCi/cc or greater.

8.1.4 Supervisor of Emergency Planning

The Supervisor of Emergency Planning is responsible for ensuring the operational readiness of the following offsite emergency response facilities:

1) The EOFs at Mazon, Morrison, Zion and Dixon (see Section 7.1.5);
2) The Corporate Command Center (see Section 7.1.4);
3) The Zion Back-up EOF in Libertyville (see Section 7.1.5).
4) The Prompt Notification System (PNS) (See Section 6.3.2).

8.2 Training

The proficiency of emergency personnel (as defined in Section 2.0) is ensured by the following means:

1) Assigning persons to emergency duties which are similar to those performed as a part of their regular work assignment;

2) The initial and annual retraining of emergency personnel on applicable generic and site specific portions of the GSEP and corresponding Emergency Plan Implementing Procedures; and

3) Participation in exercises and drills designed to sharpen those skills in which they are expected to use during a radiological emergency.

The training program for emergency personnel allows each member to meet the following objectives:

- Know the objectives of the GSEP;
- Understand the graded emergency classification system;
- Display an adequate knowledge of personal responsibilities and duties as listed in the GSEP and EPIPs;
- Know the persons with whom they may interface while performing GSEP functions; and
- Display a functional knowledge of the documents (e.g., procedures) necessary to fulfill their role in the GSEP.

The Commonwealth Production Training Department has the responsibility of ensuring that Commonwealth emergency personnel receive all necessary training and retraining. In order to carry out this responsibility, the Supervisor of Emergency Planning will notify the Production Training Department whenever new personnel are assigned GSEP related positions. The Production Training Department shall ensure that appropriate initial training, and retraining sessions are scheduled and given. It shall also maintain records of all emergency personnel trained.

Station personnel not specifically assigned to GSEP positions shall be provided with an annual review of the GSEP by the Station training staff.

Commonwealth shall make an annual written offer to train those non-Commonwealth organizations referenced in the GSEP which may provide specialized services during a radiological emergency (e.g., fire-fighting, medical services, transport of injured, etc.). This training shall acquaint the participants with the special problems potentially encountered during a radiological emergency, notification procedures, and their expected roles. Those organizations who must enter the site shall also receive on-site training. They will also be instructed as to the identity (by position and title) of those persons in the onsite organization who will control their support activites.

Commonwealth Edison shall offer programs (at least annually) to acquaint news media with the GSEP, information concerning radiation, and points of contact for release of public information in an emergency.

8.3 Exercises and Drills

8.3.1 Exercises

The Division Vice-President and General Manager, Nuclear Stations, shall ensure that Federally prescribed exercises are conducted at each nuclear station in order to test the adequacy of timing and content of implementing procedures and methods; to test emergency equipment and communication networks; and to ensure that emergency personnel are familiar with their duties. An exercise shall involve participation by Federal, State and local personnel as prescribed by the regulations.

A written scenario shall be prepared for each exercise. This scenario shall include:

1) The basic objective of the exercise;

2) The dates, time period, places, and participating organizations;

3) The simulated events;

4) The time schedule of real and simulated initiating events;

5) A narrative summary describing the conduct of the exercise to include such things as simulated casualties, rescue of personnel, deployment of radiological monitoring teams, and public information activities; and

6) Arrangements for qualified observers.

Once every six years, an exercise should be scheduled between the hours of 6:00pm and midnight, and another between midnight and 6:00am.

A critique shall be conducted as soon as practical after each exercise. The critique shall evaluate the ability of the GSEP organization to respond to a simulated emergency situation as called for in the GSEP.

8.3.2 Drills

8.3.2.1 Communications Drills

The GSEP communications systems outlined in Section 7.2 of this plan shall be fully tested annually.

The capability of (NARS) to notify the Illinois Emergency Services and Disaster Agency, the Illinois Department of Nuclear Safety, the Iowa Office of Disaster Services (for Quad Cities Station), the Wisconsin Division of Emergency Government (for Zion Station), and appropriate local agencies shall be demonstrated at least monthly. The capability (ENS & HPN) to notify the NRC from the Control Room, TSC and EOF shall be demonstrated at least monthly.

The capability to notify the NRC Region III, FEMA Region V and VII and American Nuclear Insurers (ANI) and federal emergency response organizations as listed in the GSEP Phone Directory shall be demonstrated from the Commonwealth corporate office at least quarterly. Other GSEP communication and computer equipment shall be functionally tested each calendar quarter.

8.3.2.2 Fire Drills

Fire drills shall be conducted at each nuclear station in accordance with Station Technical Specifications and/or Station procedures.

8.3.2.3 Environmental Monitoring Drills

Plant environs and radiological monitoring drills shall be conducted annually. These drills should include collection and analysis of sample media such as water, grass, soil, and air.

8.3.2.4 Health Physics Drills

Health Physics Drills shall be conducted semi-annually. These drills shall include response to, and analysis of, simulated airborne and liquid samples within the plant. At least annually, these drills shall include a test of post-accident sampling systems.

8.3.2.5 Medical Emergency Drills

A medical emergency drill, involving a simulated contaminated individual, which contains provisions for participation by local support services agencies (i.e., ambulance and support hospital) shall be conducted annually at each nuclear station. The offsite portions of the medical drill may be performed as part of the required exercise.

8.3.2.6 Assembly and Accountability Drills

An assembly and accountability drill shall be conducted annually. The drill shall include identifying the locations of all individuals within the protected area after an assembly is announced.

8.3.2.7 Offshift Augmentation Drill

Each station shall initiate an unannounced offshift notification drill at least every six months. These drills shall involve implementation of the individual station's notification procedure and documentation of the times at which persons are notified. This drill shall serve to demonstrate the capability to augment the onshift staff in a short period after declaration of an emergency.

8.4 Public Education and Information

Commonwealth Edison is committed to the distribution of informational brochures on an annual basis. These brochures shall be distributed to the public residing within the ten mile plume exposure EPZ and shall address how they shall be notified and what their actions should be in an emergency.

The public information brochure shall include the following information: what to do if a take-shelter request is given, what to do if an evacuation request is given, educational information concerning radiation, a map of major evacuation routes, a list of communities likely to serve as host shelter areas, and instructions on how to obtain additional information, especially for the disabled or their caretakers and those without transportation.

The public information brochure described above shall be mailed to all residents in the plume exposure EPZ of each nuclear station and shall also be provided to appropriate locations where a transient population may obtain a copy.

8.5 Distribution, Review, and Updating of the GSEP and Corresponding EPIPs

To ensure that the GSEP and the corresponding Emergency Plan Implementing Procedures are kept current and that updated copies are maintained by all persons assigned GSEP manuals, Commonwealth's Supervisor of Emergency Planning shall ensure the following:

1) Each GSEP manual shall be assigned a serial number;

2) An assignment record shall be maintained of all GSEP manuals;

3) GSEP manuals shall be distributed on a controlled basis to all individuals requiring them, including directors of GSEP positions and all appropriate Federal, State, and local agencies;

4) The GSEP shall be reviewed and updated as needed; the GSEP will be certified (recorded) as current on an annual basis;

5) Proposed revision to the GSEP shall be reviewed and approved by each nuclear generating station's Onsite Review Committee and the CECo Offsite Review committee. Documentation regarding this review and approval shall be maintained in the appropriate generating station and CECo corporate office files. In addition to this review and approval the GSEP shall be:

   a) Reviewed by the Supervisor of Emergency Planning
   b) Approved by the Technical Services Manager, Nuclear Stations Division
   c) Authorized for use by the Division Vice-President and General Manager, Nuclear Stations Division

6) All persons in possession of an authorized GSEP manual shall receive authorized changes. Revised pages of the GSEP shall be dated and marked to show where changes have been made; the new pages added and old pages destroyed;

7) Emergency Plan Implementing Procedures shall be developed consistent with the GSEP (see Section 9.2) and reviewed every two years. (Station Superintendents shall ensure that this review is conducted for Station EPIPs);

8) Names and phone numbers of the GSEP organization and support personnel shall be reviewed and updated at least quarterly;

9) Whenever exercises and/or drills indicate deficiencies in the GSEP or corresponding EPIPs, such documents shall be revised as necessary to ensure corrective action.

10) The public information brochures are distributed annually.

An independent audit of the GSEP shall be conducted on an annual basis by the Commonwealth Quality Assurance Department. Actions shall be taken for evaluation and correction of all audit findings.

8.6 Emergency Equipment and Supplies

Various types of emergency equipment and supplies are maintained as required by this plan which specifies that items must be kept in the EOF, Zion Back-up EOF, TSC and the OSC. The list of the emergency equipment and supplies are specific in the corporate EPIP's. This plan also identifies a typical list of equipment to be maintained for offsite emergency monitoring Table 7.7-1 (storage location may vary). The operational readiness of these and other supplies is ensured by quarterly inventory and inspection required by each Station's procedures and their use during the required drills and exercises.

9.0 APPENDIX

9.1 Required Content of Site Specific Annex

The Generating Stations Emergency Plan (GSEP) consists of two parts, a generic plan and a site specific annex for each nuclear station. The site specific annex shall be developed by the respective nuclear station and shall contain information and guidance which is unique (site specific) to the station. The annex becomes part of the plan and is subject to the same review and audit requirements as the generic plan.

9.1.1 Annex Format and General Content

The annex format shall conform to the format used in the generic plan. Information that is in the generic plan need not be restated in the annex; however, it may be desirable to do so in some cases in the interest of continuity and clarification. The annex shall address how (means, methods, resources) the requirements and responsibilities set forth in the generic plan are to be satisfied.

9.1.2 Annex Content (Specific)

References have been made throughout the generic plan that additional information shall be in the site specific annex. Some areas require little additional information while other areas require significant input. As a minimum, site specific annexes shall address the areas described in the following subsections.

9.1.2.1 Introduction

Define the unit, station and surrounding area (include maps, drawings and/or diagrams) and address in a summary statement the annex's interface with the generic GSEP and Station procedures. Include a map or table that indicates the population distribution around the nuclear station.

9.1.2.2 Definitions

Provide definitions and/or abbreviations for terms used in the annex which are unique or have a meaning or connotation that differs from normally accepted usage.

9.1.2.3 Summary of Emergency Plan

Address in a summary statement the participating status of state and local authority with regard to increasing severity of emergency classifications.

9.1.2.4 Organizational Control of Emergencies

- Specify organization and manning for both day and night crews (to include health physics organization).
- Address the Station's commitment to augment the onsite emergency organization following declared GSEP emergencies.
- Specify the agencies with which the Station has independent agreements for support during an emergency.

9.1.2.5 Classification of Emergency Conditions

Include a table of EALs for all emergency classes.

9.1.2.6 Emergency Measures

- Address provisions for the classification and declaration of an emergency from the control room. Specify the line of authority and responsibility for emergency classification and for contacting State and local authorities (officials) who have the responsibility for taking protective actions in the interest of the public. Also specify who has authority and responsibility for recommending to state and local authority the protective actions to be taken, to include recommending evacuation.
- Describe the means (methods) of State and local governments in notifying the public of an emergency condition and of the protective actions to be taken during an emergency.
- Include a table and/or map indicating evacuation time estimates for members of the public.
- Include a map indicating the location of onsite assembly areas.
- Include map indicating site evacuation routes and address site personnel relocation and accountability and monitoring of site evacuees. Also address roadway/traffic control measures of roads under the control of the station.
- Include a plot of Containment Activity versus Radiation Level for the four points described in Section 6.2.4 of the generic GSEP.

9.1.2.7 Emergency Facilities and Equipment

- Include "as built diagrams" and descriptions of the Station Control Room, Operational Support Center, the Technical Support Center, and the Emergency Operations Facility.

- Include a description of the Station seismic instrumentation, radiation monitoring equipment, fire protection equipment, and meteorological instrumentation.

- Specify location of offsite fixed radiation environmental monitors including the rings of TLDs.

- Describe the capability and resources available to categorize accidents, including provisions for:

  a) Detection of inadequate core cooling;
  b) Monitoring of high level radiation reading in the containment;
  c) Post-accident sampling; and
  d) Monitoring of in-plant iodine.

- Specify the onsite dedicated communications to be established and maintained during an emergency.

9.1.2.8 Maintaining Emergency Preparedness

- Address the Station requirements to provide training of emergency personnel.

- Describe the means (methods) of ensuring that local agencies, media, general public (including transient populations) are provided educational information concerning planning in their behalf.

9.2 Required Content of Emergency Plan Implementing Procedures

Emergency Plan Implementing Procedures (EPIPs) that are necessary for implementation of this plan shall be developed and updated as described in Section 8.5. The content and format of the EPIPs shall be in accordance with this plan (GSEP) and guidelines issued by the Division Vice- President and General Manager, Nuclear Stations.

Each Station Superintendent is responsible for ensuring that the station's EPIPs are developed which address the following subject areas:

1) Notification procedures using call lists to notify offsite authorities and to mobilize station personnel for all emergency conditions;

2) Emergency classification through the use of Emergency Action Levels;

3) Calculation procedures that provide a brief and relatively simple method of determining offsite doses from plant releases;

4) Radiological survey procedures for emergency surveys in the plant and for onsite areas;

5) Corrective actions aimed at correcting the emergency situation at or near the source of the problem (e.g., firefighting);

6) Personnel monitoring and decontamination procedures for individuals leaving restricted areas or other areas known or suspected of being contaminated;

7) Evacuation procedures for "Protected Area" and Site Boundry.

8) Methods of personnel accountability that ensure all individuals within the site are warned of imminent threats or hazardous conditions;

9) Methods and instructions for receiving, transporting, and handling injured persons and providing onsite first aid and offsite mecical treatment;

10) Assignments of responsibility and access control for onsite emergency control centers;

11) Operation and use of onsite emergency communication systems;

12) Inventory and operational readiness of emergency equipment and supplies; and

13) GSEP organization and support agency phone numbers.

Information to be addressed in Station EPIPs may be fulfilled by other station procedures, but those procedures shall be referenced within the context of the EPIPs.

The Supervisor of Emergency Planning is responsible for ensuring that general office EPIPs are developed which address the following subject areas:

1) Notification procedures using call lists to notify corporate management, offsite GSEP organization personnel, State authorities, and offsite emergency response organizations;

2) Detailed procedures for determining projected and actual doses to members of the public following a release of radioactive material from a nuclear station;

3) Detailed procedures for radiological surveys of the environs;

4) Operation and use of offsite emergency response facilities, computers and communications;

5) Assignments of responsibility and access control for offsite emergency control facilities;

6) Methods of disseminating information to the media and the general public;

7) Procedures that address the exercise and drill program;

8) Procedures that address the recovery of a nuclear station to a pre-accident status, including reentry into previously evacuated areas, decontamination of the affected site, repair of critical plant equipment, and disposal of contaminated equipment and waste. It is not practical to plan detailed recovery actions for all conceivable situations in advance, but procedures that include at least initial planning considerations should be developed. Detailed procedures shall be developed after an emergency situation occurs as necessary; and

9) GSEP organization and support agency phone numbers.

9.3 Additional Emergency Response/Notification Requirements

The Generating Stations Emergency Plan is a plan written primarily to comply with the requirements of 10 CFR 50, Paragraph 50.47 and Appendix E. As such, GSEP addresses emergency conditions as defined in NUREG 0654. On the basis of other regulatory requirements, additional emergency conditions and required notifications have been defined. These regulations are listed below and define emergency conditions that may or may not warrant an emergency declaration under the GSEP in accordance with Section 5.0 of this plan:

1) 10 CFR 50.70, "Inspections, Records, Reports, Notifications".

2) 10 CFR 73, "Physical Protection of Plants and Materials".

3) 33 CFR 153, "Control of Pollution by Oil and Hazardous Substances."

4) 10 CFR 20.403 and State of Illinois Rules and Regulations for Protection against Radiation, Section D.403, "Incident Notification Requirements."

5) 10 CFR 50.72 Immediate Notification Requirements for Operating Nuclear Power Reactors.

The following sections summarize the actions required in accordance with the above rules and regulations.

9.3.1 Notifications of NRC Operations Center

An on-duty Station Management person shall notify the NRC Operations Center via the NRC's Emergency Notification System of:

1) The declaration of any of the EMERGENCY CLASSIFICATIONS as specified in the GSEP, or

2) Those NON-EMERGENCY events specified in 10 CFR 50.72 paragraph (b).

If the NRC's Emergency Notification System is inoperative the required notificaions shall be made via commercial telephone service, other dedicated telephone service, or any other method which shall ensure that a report is made as soon as practical to the NRC Operations Center. Refer to the GSEP telephone directory for the NRC Operations Center phone number.

The GSEP Emergency Classification shall be reported to the NRC Operations Center immediately after notification of the appropriate State or local agencies but not later than one (1) hour after the time of classification.

Declaration of "NON-EMERGENCY" events in accordance with 10 CFR 50.72 paragraph (b), shall be reported via the Emergency Notification System to the NRC Operations Center in accordance with the "ONE-HOUR REPORT" or "FOUR-HOUR REPORT" criteria.

The Non-Emergency Event "ONE-HOUR REPORT" shall be made to the NRC Operations Center as soon as practical and in all cases within one hour of the occurrence of any of the items listed in 10 CFR 50.72 paragraph (b) (1), subparagraph i, thru vi.

The Non-Emergency Event "FOUR-HOUR REPORT" shall be to the NRC Operations Center as soon as practical and in all cases, within four (4) hours of the occurrance of any of the items listed in 10 CFR 50.72 paragraph (b) (2), subparagraph i, thru vi.

Initial notification to the NRC Operations Center shall so state: the Emergency Class declared, or "One-Hour Report", or "Four-Hour Report" as well as necessary details to describe the event per 50.72 (b) (1) or (b) (2), as applicable.

Followup notifications shall be reported to the NRC Operations Center immediately, but not later than one (1) hour if:

i) there is any further degradation in the level of safety of the plant or other worsening plant conditions occur such that a GSEP Emergency Classification is now applicable,

ii) there is any change from one Emergency Class to another, or

iii) there is a termination of the Emergency Class is declared.

Additional followup notifications shall also be reported to the NRC Operations Center immediately, but not later than one (1) hour to inform the NRC of:

iv) the results of evaluations or assessments of plant conditions,

v) the effectiveness of response or protective measures taken, or

vi) information related to plant behavior that is not understood.

If requested by the NRC maintain an open, continuous communications channel with the NRC Operations Center.

9.3.2 Nuclear Station Security Plan

Each nuclear station shall have a Security Plan that complies with the requirements of 10 CFR 73.

The interface between the GSEP and the Nuclear Station Security Plan is basically one of parallel operation. The plans are compatible. The GSEP emergency response measures, once initiated, are executed in parallel with measures taken in accordance with the Station Security Plan.

The Nuclear Station Security Plan, Appendix C, Contingency Events, identifies situations which could be initiating conditions for GSEP response measures. Contingency events include bomb threats, attack threats, civil disturbances, protected area intrusions, loss of guard/post contact, vital area intrusions, bomb devices discovered, loss of guard force, hostages, extortion, fire/explosions, internal disturbances, security communications failure, and obvious attempts of sabotage. The Station Security Plan provides guidance for decisions and actions to be taken for each security contingency event. As guidance, the Security Plan allows for differing responses depending upon the assessment of the actual situation within each contingency event classification.

The asssessment of any security contingency event and the decision to initiate, or not to initiate the GSEP will be the responsibility of the Station Director or the Shift Engineer acting as the Station Director. All identified security contingency events have the potential of being assessed as initiating conditions for an emergency declaration under the GSEP.

9.3.3 Control of Pollution by Oil and Hazardous Substances

9.3.3.1 Reportable Discharges of Oil or Hazardous Substances

A reportable discharge for the purpose of compliance with 33 CFR 153 is defined as the spilling, leaking, pumping, pouring, emitting, emptying, or dumping into or upon any public water body of:

- Oil in such quantities as to cause a film or sheen upon or discoloration of the water or upon adjoining shorelines; or

- Hazardous substances designated in 40 CFR 116 in quantities equal to or exceeding in any 24 hour period the harmful quantities establish in 40 CFR 118.

Also, PCB fluid leaks or discharges of greater than one-half gallon or ten pounds are considered as reportable incidents.

9.3.3.2 Reporting Procedure

Upon learning of a reportable discharge as described in Section 9.3.3.1 above, the Station Superintendent or an alternate shall immediately notify the Duty Officer, National Response Center, U.S. Coast Guard, toll free telephone number 1-800-424-8802. If notification to the National Response Center is not possible or practical, notice shall be given to each of the following officials in order of priority:

1) Designated EPA/Coast Guard On-Scene Coordinator (OSC); and

2) Commanding Officer of any Coast Guard unit in the vicinity of the discharge; and

3) Commander of the Coast Guard district in which the discharge occurs.

In addition, the Station Superintendent or an alternate shall notify:

1) The Director of Water Quality, Environmental Affairs; and

2) The Division Vice President and General Manager, Nuclear Stations Division.

9.3.3.3 Spill Prevention Control and Countermeasure Plans

Each generating station shall have a Spill Prevention Control and Countermeasure (SPCC) Plan prepared in accordance with 40 CFR 112.7 in order to minimize the potential for oil discharges. No SPCC Plan shall be effective unless it has been reviewed and certified by a Registered Professional Engineer. Each SPCC Plan shall be reviewed and evaluated at least once every three years in accordance with 40 CFR 112.5.

Upon learning of an oil discharge into a navigable waterway at levels determined to be harmful to the public health or welfare, the United States Coast Guard must be immediately notified as set forth in Section 9.3.3.2.

The exact criteria for declaring oil discharges and the subsequent notification procedure shall be defined in the SPCC Plan and/or Station Emergency Plan Implementing Procedures.

9.3.4 Incident Notification Requirements for the NRC Region III Office and the Illinois Department of Nuclear Safety

In accordance with 10CFR20 - Standards for Protection Against Radiation Section 20.403 Notification of Incidents the following actions shall be taken by the appropriate CECo personnel.

An on-duty Station management person shall immediately notify the NRC Region III Office and the Illinois Department of Nuclear Safety by telephone, telegraph, mailgram, or facsimile of any incident involving any source of radiation possessed by the Station and which may have caused or threatens to cause:

1) A dose equivalent to the whole body of any individual of 25 rems or more of radiation; a dose equivalent to the skin of the whole body of any individual of 150 rems or more of radiation; or a dose equivalent to the feet, ankles, hands, or forearms of any individual of 375 rems or more of radiation; or,

2) The release of radioactive material in concentrations which if averaged over a period of 24 hours, would exceed 5,000 times the limits specified for such materials in Appendix B Table II of 10CFR20; or,

3) A loss of one working week or more of the operation of any facilities affected; or,

4) Damage to property in excess of $200,000.*

An on-duty Station management person shall within 24 hours notify the NRC Region III Office and the Illinois Department of Nuclear Safety by telephone and telegraph, mailgram, or facsimile of any incident involving any source of radiation possessed by the Station and which may have caused or threatens to cause:

1) A dose equivalent to the whole body of any individual of 5 rems or more of radiation; a dose equivalent to the skin of the whole body of any individual of 30 rems or more of radiation; or a dose equivalent to the feet, ankles, hands, or forearms of 75 rems or more of radiation; or,

2) The release of radioactive material in concentrations which, if averaged over a period of 24 hours, would exceed 500 times the limits specified for such materials in Appendix B, Table II of 10 CFR 20; or,

3) A loss of one day or more of the operation of any facilities affected; or,

4) Damage to property in excess of $2,000.*

*For the State of Illinois, the property damage reporting requirements are $100,000 and $1,000 for immediate and 24 hour notification, respectively.

9.3.5 Reports of Theft or Loss of Radiation Sources and/or Licensed Materials

In accordance with "Illinois Rules and Regulations for Protection Against Radiation" Section D.403 and D.402 Amended 4-29-76 the following sections 9.3.5.1 to 9.3.5.3 have been developed. In addition this section also requires reporting to the appropriate NRC offices in accordance with 10 CFR 20 Section 20.402. These requirements are discussed in Sections 9.3.5.4 and 9.3.5.5.

9.3.5.1 Initial Notification to the Illinois DNS of Loss of Radiation Source.

An on-duty Station management person shall immediately notify the Illinois Department of Nuclear Safety by telephone and telegraph, mailgram, or facsimile of the theft or loss of any inventoried source of ionizing radiation after such occurrence becomes known.

9.3.5.2 Initial Notification to the Illinois DNS of Substantial Hazard in Unrestricted Area.

An on-duty Station management person shall immediately report to the Illinois Department of Nuclear Safety, after its occurrence becomes known to the licensee, any loss or theft of licensee material in such quantities and under such circumstances that it appears to the licensee that a substantial hazard may result to persons in unrestricted areas.

9.3.5.3 Notification of CECo Personnel.

An on-duty Station management person shall upon following notification to DNS and/or NRC as referenced in paragraph 9.3.5.1 and/or 9.3.5.2 above, "immediately" notify both the System Power Supply Office (SPSO) Dispatcher, and the Nuclear Duty Officer (NDO). The SPSO will ensure the NDO is contacted by the Station by calling the NDO.

9.3.5.4 Initial Notification to the NRC of Loss or Theft of Licensed Material

An on-duty Station Management person shall report by telephone to the Director of the NRC Inspection and Enforcement office as listed in Appendix D of 10CFR20, immediately after its occurance becomes known to the licensee, any loss or theft of licensed material in such quantities and under such circumstances that it appears to CECo personnel that a substantial hazard may result to persons in "Unrestricted Areas".

9.3.5.5 Followup Notification to the NRC of Loss or Theft of Licensed Material

CECo personnel at the station where the loss or theft of Licensed Material had occurred will perform the following report within thirty (30) days to the appropriate NRC offices in accordance with 10CFR20 Section 20.402.

9.4 Bibliography

References and supporting plans consulted in writing the Commonwealth Generating Stations Emergency Plan are listed in this section. With exception of regulatory requirements, inclusion of material on this list does not imply adherence to all criteria or guidance stated in each individual reference.

1) Code of Federal Regulations, Title 10, Chapter 1 Parts 20, 50, 73, and 100.

2) Code of Federal Regulations, Title 33, Chapter 1, Part 153.

3) Code of Federal Regulations, Title 40, Chapter 1, Parts 110, 112, 116, and 118.

4) Code of Federal Regulations, Title 44, Chapter 1, Part 401.

5) Code of Federal Regulations, Title 49, Chapter 1, Parts 171 and 172.

6) Commonwealth Edison Quality Assurance Manual.

7) EPA "Manual of Protective Action Guides and Protective Actions for Nuclear Incidents," 1975 (and updated, 1979).

8) NUREG 0396, "Planning Basis for the Development of State and Local Government Radiological Emergency Response Plans in Support of Light Water Nuclear Power Plants," Dec. 1978.

9) NUREG 0578, "TMI-2 Lessons Learned Task Force Status Report and Short-Term Recommendations."

10) NUREG 0654, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants," Revision 1, November, 1980.

11) NUREG 0696, "Functional Criteria for Emergency Response Facilities."

12) "Federal Bureau of Investigation and Nuclear Regulatory Commission Memorandum of Understanding for Cooperation Regarding Threat, Theft, or Sabotage in U.S. Nuclear Industry", Federal Register, Vol. 44, p. 75535, December 20, 1979.

13) "Illinois Rules and Regulations for Protection Against Radiation," Section D.403 and D.402 Amended 4/29/76.

14) EPA 520/1-78-001B, "Protective Action Evaluation, Part 2, Evacuation and Sheltering as Protective Actions against Nuclear Accidents Involving Gaseous Releases".

15) "Commonwealth Edison Offsite Dose Calculation System," system description, latest approved copy.

16) "Emergency Preparedness INPO Criteria," dated February 12, 1980.

17) ANSI/ANS 3.7.2 - 1979, "Emergency Control Centers for Nuclear Power Plants."

18) ANSI/ANS 3.7.3 - 1979, "Radiological Emergency Preparedness Exercises for Nuclear Power Plants."

19) "Nuclear Station Security Plan" Note: The Station Security Plan contains industrial security information must be withheld from public disclosure under provisions of 10 CFR 2.790(d).

20) Illinois Plan for Radiological Accidents (IPRA), Latest approved copy.

21) The Iowa Emergency Plan, Latest approved copy.

22) State of Wisconsin Peacetime Radiological Emergency Response Plan.

23) "Radiological Assistance Plan," Region 5, Department of Energy, Latest approved copy

24) INPO Emergency Response Plan, Latest approved copy.

25) NUREG 0737, "Clarification of TMI Action Plan Requirements," November, 1980.

26) "Evacuation Time Estimates for Areas Near Nuclear Power Plants - Dresden, Quad Cities, Zion, LaSalle County Stations", D.L. Peoples letter to B.K. Grimes, dated March 11, 1980. Preliminary estimates for Byron and Braidwood Station were submitted by letter to D. G. Eisenhut, NRC, from L.O. DelGeorge, on August 29, 1980. A document "Evacuation Time Estimates Within the Plume Exposure Pathway Emergency Planning Zone for the Byron Nuclear Generating Station", dated December 1982, was submitted to the Byron ASLB in December 1982.

27) "Voluntary Assistance Agreement By and Among Electric Utilities Involved in Transportation of Nuclear Materials," dated November 1, 1980.

28) Comprehensive Environmental Response, Compensation and Liability Act of 1980.

29) NUREG 0728 - "Report to Congress: NRC Incident Response Plan".

30) Accidental Radioactive Contamination of Human Food and Animal Feeds; Recommendation for State and Local Agencies, Volume 47, No. 205, October 22, 1982.

31) USNRC Regulatory Guide 1.101, "Emergency Planning and Preparedness for Nuclear Power Reactors", revision 2, October, 1981

32) American Nuclear Insurers Bulletin #5B (81).

33) "Potassium Iodide as a Thyroid Blocking Agent in a Radiation Emergency: Final Recommendations on Use", Federal Register Vol. 47, No. 125, June 29, 1982.

34) NUREG 0737 Supplement #1 or latest submitted scheduled of planned operational dates.

35) CECo April 1983 response to NUREG 0737 Supplement #1 or latest submitted schedule of planned operational dates.

36) William J. Dircks, Executive Director for Operations, NRC, to Dr. Donald F. Knuth, President KMC, Inc. dated October 26, 1981