

**ATTACHMENT 1**

NEXTERA ENERGY DUANE ARNOLD, LLC  
DUANE ARNOLD ENERGY CENTER

NG-19-0017

LICENSE AMENDMENT REQUEST (TSCR-182)

DESCRIPTION AND EVALUATION OF THE PROPOSED CHANGES

28 pages follow

**NEXTERA ENERGY DUANE ARNOLD, LLC  
DUANE ARNOLD ENERGY CENTER**

**License Amendment Request (TSCR-182): Proposed Changes to the Emergency Plan for Permanently Defueled Condition**

**EVALUATION OF PROPOSED CHANGE**

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## 1.0 SUMMARY DESCRIPTION

The proposed changes would revise the Duane Arnold Energy Center (DAEC) Emergency Plan on-shift and augmented Emergency Response Organization (ERO) staffing to support the planned permanent cessation of operations and permanent defueling of the DAEC reactor (Reference 6.1). Specifically, the proposed changes would eliminate the on-shift positions not needed for the safe storage of spent fuel in the Spent Fuel Pool (SFP) during the initial decommissioning period and eliminate the ERO positions not necessary to effectively respond to credible accidents. The proposed changes in staffing are commensurate with the reduced spectrum of credible accidents for a permanently shut down and defueled power reactor facility. NextEra Energy Duane Arnold, LLC (NEDA) has reviewed the proposed changes against the planning standards in 10 CFR 50.47(b), "Emergency Plans," and requirements for 10 CFR 50, Appendix E, "Emergency Planning and Preparedness for Production and Utilization Facilities," and has concluded that the standards and requirements will continue to be met. Therefore, no exemption from 10 CFR 50.47(b) and requirements in 10 CFR 50, Appendix E is required.

## 2.0 DETAILED DESCRIPTION

### 2.1 DAEC Emergency Plan Background

DAEC has four Emergency Response Facilities (ERFs) augmenting the on-shift staff: the Technical Support Center (TSC), the Operational Support Center (OSC), the Emergency Operations Facility (EOF) and the Joint Information Center (JIC). During an emergency, the Operations Shift Manager initially assumes the responsibility as Emergency Coordinator (EC). Emergency response by on-shift staff is directed by the EC from the Control Room until relieved by an augmenting staff with the subsequent activation of ERFs.

DAEC uses four standard levels of emergency classification as described in NUREG-0654, Revision 1 (Reference 6.4). Augmentation of the on-shift staff for an Unusual Event is optional and is left to the discretion of the EC. At the Alert or higher emergency classification levels, the TSC and OSC are activated. The EOF and JIC are activated at a Site Area Emergency or higher classification. The associated augmenting personnel are notified to report to their assigned facilities.

Currently, the DAEC Emergency Plan, Section 'B', Table B-1 and Figure B-1 specify the on-shift and augmented staffing for certain positions in the following Major Functional Areas:

- Plant Operations and Assessment of Operational Aspects
- Emergency Direction and Control
- Notification / Communications
- Radiological Accident Assessment and Support of Operational Accident Assessment
- Plant System Engineering, Repair and Corrective Actions
- Protective Actions
- Fire Fighting
- Rescue Operations and First Aid
- Site Access Control and Personnel Accountability

The proposed post-shutdown on-shift and augmented ERO staff will continue to address the Major Functional Areas.

## 2.2 Reason for the Proposed Changes

The proposed changes are desired to reflect the pending permanent cessation of operation and permanent defueling of the DAEC reactor. After the reactor is shut down, all fuel assemblies will be removed from the reactor vessel and placed in the SFP. The irradiated fuel will be stored in the SFP and in the Independent Spent Fuel Storage Installation (ISFSI) until it is removed by the U.S. Department of Energy (DOE). Upon docketing of the certifications for permanent cessation of operations (10 CFR 50.82(a)(1)(i)) and permanent removal of fuel from the reactor vessel (10 CFR 50.82(a)(1)(ii)), pursuant to 10CFR 50.82(a)(2), the 10 CFR 50 license for DAEC will no longer authorize operation of the reactor or emplacement or retention of fuel into the reactor vessel.

The proposed revisions to the DAEC Emergency Plan are commensurate with the reduction in hazards associated with the permanently shut down and defueled condition, and will allow the DAEC staff to transition from staffing required for an operating facility to that required for a permanently shut down and defueled facility. The proposed changes are required to properly reflect the conditions of the facility while continuing to preserve the DAEC Decommissioning Trust Fund and the effectiveness of the DAEC Emergency Plan.

## 2.3 Description of the Proposed Changes

### On-Shift Staffing

The proposed changes to the DAEC Emergency Plan would eliminate the following on-shift positions in Table B-1 of the DAEC Emergency Plan, Section 'B':

- One Control Room Supervisor (SRO)
- Three Control Room Operators (ROs)
- Two Auxiliary Operators
- One Shift Technical Advisor
- One Shift Communicator
- One Chemistry Technician
- One Health Physics (HP) Technician

The proposed post-shutdown on-shift staff would consist of:

- One Operations Shift Manager (qualified as a Certified Fuel Handler (CFH))
- Two Non-Certified Operators (NCOs)
- One Health Physics (HP) Technician

Use of the titles "Certified Fuel Handler" and "Non-Certified Operator" is consistent with other NEDA submittals, or planned submittals, to the NRC. Specifically, NEDA letter dated January 29, 2019, "Request for Approval of Certified Fuel Handler Training Program (Reference 6.2) and NEDA letter, "License Amendment Request (TSCR-181): Application to Align Technical Specification Staffing and Administrative Requirements for Permanently Defueled Condition," (Reference 6.3) which will be submitted to the NRC under separate letter in 2019. Approval of the changes to the DAEC Emergency Plan proposed in this submittal is not dependent upon prior NRC approval of the changes proposed in References 6.2 and 6.3.

The term NCO is used to differentiate from CFH. CFHs will supervise fuel handling operations in the permanently shut down and defueled condition. Operations Shift Managers will be qualified as CFHs. Additional staff who are CFH-qualified may be utilized to support fuel handling activities. Therefore, any reference to the OSM position throughout this submittal is considered to encompass the CFH position requirements. Control Room Operators will not be utilized in the permanently shut down and defueled condition.

The NCO position will include the post-shutdown duties of the current Control Room Operators, such as monitoring indications and communications in the Control Room, and the current Auxiliary Operators, such as manipulation and monitoring of plant equipment. The specific training requirements of the NCO position will be developed by the DAEC Training Department and will be reviewed and approved by Operations Management. The training program will be designed with an emphasis on systems and processes important to maintaining SFP cooling, and monitoring and controlling SFP parameters, such as SFP water level and temperature. Consequently, the NCOs will be trained on pertinent Control Room indications and controls that will be monitored and operated to maintain SFP cooling and SFP water level, in addition to plant radiological conditions. The NCO training program will include training on applicable aspects of the DAEC Emergency Plan-related NCO duties. NCOs will be trained and qualified consistent with 10 CFR 50.120, "Training and qualification of nuclear power plant personnel," in accordance with NEDA training procedures.

#### Augmented Staffing

The proposed changes to the DAEC Emergency Plan will eliminate augmented staffing positions currently identified in the DAEC Emergency Plan and Emergency Plan Implementing Procedures (EPIPs) describing the activation and operation of the Technical Support Center (TSC), Emergency Operations Facility (EOF) and Operations Support Center (OSC).

The proposed changes would eliminate the following augmented staffing positions in Table B-1 of the DAEC Emergency Plan, Section 'B':

- Four Health Physics (HP) Technicians
- Core/Thermal Hydraulics (i.e., Reactor Engineer)
- Electrical Engineer (i.e., IC/EM Engineer)
- Mechanical Engineer
- One Electrical Maintenance

#### ERO Staffing

The proposed changes would eliminate the following ERO positions identified in Figure B-1 of the DAEC Emergency Plan, Section 'B':

- TSC Ops Supervisor
- Reactor Engineer\*
- Tech & Analysis Engineer
- IC/EM Engineer\*
- Mechanical Engineer\*
- IC/EM Supervisor

- Mechanical Supervisor

\* Denotes a position also represented in Table B-1.

Attachment 2 provides the affected Sections of the DAEC Emergency Plan with the proposed changes shown in marked-up format. Attachment 3 provides clean copy versions of the revised DAEC Emergency Plan Sections. ERO staffing positions proposed for elimination are also reflected in Table 1 of this attachment.

### **3.0 TECHNICAL EVALUATION**

#### **3.1 Accident Analysis**

Chapter 15 of the DAEC Updated Final Safety Analysis Report (UFSAR) describes safety analyses for postulated Design Basis Accidents (DBAs) under which DAEC is licensed. Upon docketing of the certifications required by 10 CFR 50.82(a)(1)(i) and (ii), the 10 CFR Part 50 license for DAEC will no longer authorize operation of the reactor or emplacement or retention of fuel into the reactor vessel, as specified in 10 CFR 50.82(a)(2). Therefore, most of the accident scenarios postulated in the UFSAR will no longer be applicable once DAEC is in the permanently shut down and defueled condition.

The postulated DBA that will remain applicable to DAEC in its permanently shut down and defueled condition is the Fuel Handling Accident (FHA) in the reactor building, where the SFP is located.

The Loss-of-Coolant Accidents (LOCAs), Control Rod Drop Accident, NFWA 805 Safe Shutdown, Anticipated Transient Without Scram (ATWS) accidents and Station Blackout (SBO), were not considered in the analysis of proposed post-shutdown on-shift staffing. Once the certifications required by 10 CFR 50.82(a)(1)(i) and (ii) are docketed, DAEC will no longer be licensed to operate and 10 CFR 50.63 (the SBO Rule) will no longer be applicable pursuant to 10 CFR 50.63(a)(1). Similarly, 10 CFR Part 50.48, NFWA 805 is applicable to licensed nuclear power generating stations. Once the certifications required by 10 CFR 50.82(a)(1)(i) and (ii) are docketed, DAEC will no longer be licensed to generate power. Finally, because the 10 CFR Part 50 license will no longer authorize emplacement or retention of fuel in the reactor vessel, neither an ATWS nor a Control Rod Drop Accident will be credible events.

An evaluation was performed to determine if sufficient on-shift staffing would be available to implement emergency response actions in response to potential aircraft impacts in accordance with 10 CFR 50.54(hh)(1). In the permanently shut down and defueled condition, the Fire Brigade will relocate away from target areas and prepare for reentry. The task of maintaining communications during this event is transferred to the NCO trained and qualified to perform this function. Therefore, sufficient staffing is available to promptly implement response actions required under 10 CFR 50.54(hh)(1) without impacting the performance of designated emergency plan functions.

In the permanently shut down and defueled condition, the DAEC Fire Brigade will be responsible for implementing the SFP inventory makeup strategies required under 10 CFR 50.54(hh)(2). DAEC will continue to maintain a trained and qualified Fire Brigade responsible for implementation of the SFP inventory makeup strategies. The Fire Brigade personnel identified in the DAEC Post-Shutdown Emergency Plan are separate and distinct from those responsible for implementing the major elements of the emergency plan including command and control, emergency classification, offsite notifications, and dose assessment/protective action

recommendation development. Therefore, sufficient staffing is available to promptly implement SFP inventory makeup strategies required under 10 CFR 50.54(hh)(2) without impacting the performance of designated emergency plan functions.

As described in Section 3.2.2.2, events involving a loss of SFP cooling and/or water inventory can be addressed by implementation of SFP inventory makeup strategies required under 10 CFR 50.54(hh)(2), which will continue to be maintained to satisfy applicable License Conditions of the Renewed Facility Operating License.

## 3.2 Analysis of Proposed Change

### 3.2.1 On-Shift and Augmentation Staffing

To support reduced staffing following permanent cessation of operations and permanent removal of fuel from the reactor vessel, the on-shift staffing levels have been evaluated, in part, using the methodology in NEI 10-05, "Assessment of On-Shift Emergency Response Organization Staffing and Capabilities," (Reference 6.6) which evaluates the postulated accidents that will be applicable in the permanently defueled condition. DAEC performed a multi-disciplined team review of the on-shift staffing changes. This team included participants from Operations, Radiation Protection, Security, Safety, Emergency Planning and Regulatory Assurance. The on-shift staffing analysis considered the following accident scenarios:

#### Design Basis Threat

The event evaluated for this analysis assumes a land based threat that is neutralized immediately when inside the protected area fence, no significant damage to equipment or systems that require corrective actions before the ERO is staffed, no radiological release, and no fire that requires firefighting response before the ERO is staffed.

#### Fuel Handling Accident

The postulated design basis accident that will remain applicable to DAEC in its permanently shut down and defueled condition is the FHA in the reactor building where the SFP is located.

#### Aircraft Probable Threat (50.54(hh))

Notification is received from the NRC that a probable aircraft threat exists.

#### Control Room Fire Requiring Evacuation and Maintain SFP Cooling

A fire occurs requiring the evacuation of the Control Room and actions implemented to control service water pumps from a remote location.

#### General Emergency with radioactive release and Protective Action Recommendation (assumed for analysis purposes)

This event is based on the same initial conditions as the FHA, but assumes a dose that exceeds the Environmental Protection Agency's Protective Action Guides beyond the site boundary, and thus necessitates promulgation of a Protective Action Recommendation.

The analysis concluded that in a permanently shut down and defueled condition, one Operations Shift Manager, two NCOs, and one HP Technician can perform all required Emergency Plan actions in a timely manner. There are no collateral duties that would prevent the timely performance of emergency plan functions as required by regulation without augmented ERO personnel for at least 60 minutes following an emergency declaration, while continuing to comply with the DAEC Emergency Plan, site commitments, and applicable regulations. The Fire Brigade complement considered in the analysis of proposed post-shutdown on-shift staffing was consistent with the requirements from the Fire Hazards Analysis.

Additional analysis for each of the proposed on-shift and augmentation staffing changes associated with DAEC Emergency Plan Section 'B', Table B-1 is provided by Major Functional Area in Sections 3.2.1.1 through 3.2.1.9.

### 3.2.1.1 Major Functional Areas: Plant Operations and Assessment of Operational Aspects

*Major Tasks: Respond to condition and mitigate operational event consequences*

#### Current Staffing Requirement

During normal operations, the minimum staff on duty at the plant during all shifts to satisfy this Major Functional Area consists of:

- 1 Operations Shift Manager (SRO)
- 1 Control Room Supervisor (SRO)
- 3 Control Room Operators (ROs)
- 2 Auxiliary Operators
- 1 Shift Technical Advisor (STA)

#### Proposed Change

The proposed changes to the DAEC Emergency Plan will eliminate the following on-shift positions:

- 1 Control Room Supervisor (SRO)
- 3 Control Room Operators (ROs)
- 2 Auxiliary Operators
- 1 Shift Technical Advisor (STA)

The proposed changes to the DAEC Emergency Plan will add the following on-shift positions:

- 2 NCOs

An additional change is that the Operations Shift Manager position will be fulfilled by a person qualified as a CFH instead of possessing an SRO license.

#### Analysis

Because of the reduced number of possible events requiring mitigating actions in the permanently shut down and defueled condition and the limited number of actions to be

performed by the Control Room positions in a permanently shut down and defueled condition, no Control Room Operators or STA job tasks are required for any of the events analyzed or proposed post-shutdown on-shift staffing. Therefore, the Control Room Operator and STA positions can be eliminated without reducing the effectiveness of the DAEC Emergency Plan.

The regulatory standard for minimum staffing requirements for NRC licensees is documented in NUREG-0654. The total minimum on-shift staffing expressed in NUREG-0654, Table B-1, is ten personnel. Plant Operations shift staffing, as implemented previously, was based on an operating philosophy that provided defense in depth. The analysis of proposed post-shutdown on-shift staffing concluded that in a permanently shut down and defueled condition, the Operations Shift Manager and two NCOs can perform all required DAEC actions in a timely manner and there are no collateral duties that would prevent the timely performance of emergency plan functions. Therefore, this deviation from the guidance presented in NUREG-0654, Table B-1 is acceptable.

### 3.2.1.2 Major Functional Area: Emergency Direction and Control

*Major Tasks: Site Utility Emergency Management*

#### Current Staffing Requirement

The on-shift Operations Shift Manager performs this function until relieved.

#### Proposed Change

No changes in staffing are proposed.

#### Analysis

DAEC proposed no changes to the staffing.

### 3.2.1.3 Major Functional Area: Notification/Communications

*Major Tasks: Notify licensee, state, local & federal personnel, and maintain communications*

#### Current Staffing Requirement

The Operations Shift Manager performs the function of Key Communicator by completing the offsite notification form. A dedicated Shift Communicator performs the function of notification of the Offsite Response Organizations (OROs).

#### Proposed Change

The Shift Communicator will be replaced by an on-shift NCO for notification of the OROs.

#### Analysis

The Shift Communicator is currently an Operations Shift Manager who completes the offsite notification form and provides the information to a dedicated Shift Communicator.

The Shift Communicator responding to the Control Room contacts the County and State OROs via the All-Call phone system in order to provide information to these agencies. Additionally, the Shift Communicator provides the notification to the NRC within 60 minutes following the declaration of an event via the NRC ENS phone system.

Initial notification to offsite authorities are required to occur within 15 minutes of declaration of an emergency. Initial NRC notification is required to occur immediately after notification of the appropriate State of Iowa or local agencies and not later than 60 minutes after the time of the emergency declaration. Subsequent notifications are made should the event escalate and for informational updates. The resource commitment to support the communication and notification function is not full time so there is time to support performance of collateral duties during the first 60 minutes until staff augmentation can occur. The on-shift communicator has advanced communications capabilities available such as the All-Call phone system which provides a rapid method for contacting offsite response organizations. Communications with the NRC take place over dedicated telephone lines provided for and maintained by the NRC. For purposes of the analysis of proposed post-shutdown on-shift staffing, NRC notifications were treated as a continuous action in accordance with 10 CFR 50.72(c)(3), meaning that once the initial NRC communications are established, it was assumed that the NRC will request an open line to be continuously maintained with the NRC Operations Center. The use of dedicated phone circuits and headsets enables these notifications to be performed by the same person who performs the County and State notifications.

In the post-shutdown condition, the task of Communication will remain with the Operations Shift Manager. This position will be responsible for completion of the offsite notification form and providing the information to the person performing offsite notifications. The person performing offsite notifications to the County and State OROs will no longer be a dedicated Shift Communicator but a NCO. Additionally, the task of providing information to the NRC within 60 minutes of the declaration of an event will be the responsibility of the NCO. This change is acceptable because the analysis of proposed post-shutdown on-shift staffing concluded that in a permanently defueled condition, the NCO can perform this required DAEC Emergency Plan action in a timely manner. The resource commitment to support the communication and notification function is not full time, and it was determined that there is time to support performance of collateral duties during the first 60 minutes until staff augmentation can occur.

#### 3.2.1.4 Major Functional Area: Radiological Accident Assessment and Support of Operational Accident Assessment

##### 3.2.1.4.1 Major Task: Offsite Dose Assessment and Protective Action Recommendations

###### Current Staffing Requirement

On-shift Chemistry Technician performs the initial dose assessment and is augmented by the MIDAS Operator within 60 minutes. The on-shift Chemistry Technician also performs reactor coolant sampling and analysis.

###### Proposed Change

Eliminate the on-shift Chemistry Technician position.

### Analysis

The elimination of the on-shift Chemistry Technician position does not impact the ability of the on-shift staff to perform the initial dose assessment. The analysis of proposed post-shutdown on-shift staffing concluded that in a permanently defueled condition, the Operations Shift Manager and two NCOs can perform all required DAEC Emergency Plan actions in a timely manner and there are no collateral duties that would prevent the timely performance of emergency plan functions. NCOs can perform initial dose assessment using existing EIPs.

#### 3.2.1.4.2 Major Task: Offsite Surveys

##### Current Staffing Requirement

Augmentation by one HP Technician and one DAEC Staff Member comprising a Field Team within 60 minutes and a second HP Technician and DAEC Staff Member within 90 minutes.

##### Proposed Change

No changes in staffing are proposed.

##### Analysis

DAEC proposes no changes to the Offsite Survey task staffing.

#### 3.2.1.4.3 Major Task: Onsite and In-Plant Surveys

##### Current Staffing Requirement

On-shift HP Technician initially performs onsite and in-plant surveys.

Augmentation of the on-shift HP Technician by two HP Technicians within 60 minutes and two additional HP Technicians within 90 minutes.

##### Proposed Change

Eliminate two (2) HP Technicians augmenting within 90 minutes.

Reduce the 60-minute augmenting HP Technician positions from two (2) to one (1).

##### Analysis

DAEC will no longer be an operating nuclear power plant. In accordance with 10 CFR 50.82(a)(1), pursuant to 10 CFR 50.82(a)(2), the Part 50 license will no longer authorize operation of the reactor, or emplacement or retention of fuel in the reactor vessel. With irradiated fuel being stored in the SFP and ISFSI, the spectrum of credible accidents and operational events, and the quantity and complexity of activities required for the safe storage of spent nuclear fuel is reduced as compared to an operating plant. The risk in

the permanently shut down and defueled condition is significantly reduced because many of the potential initiating conditions that would lead to an emergency declaration will no longer be possible and the elimination of credible accidents involving an operating reactor provides additional time to plan and execute assessment and mitigation actions. If additional resources are determined to be necessary during an emergency, DAEC maintains the necessary staffing to provide sufficient personnel trained in radiation protection to respond and perform the required actions, if necessary, in the permanently shut down and defueled condition.

The elimination of credible accidents involving an operating reactor provides additional time to plan and execute assessment and mitigation actions. Additionally, the duties and coverages required for the HP Technician positions are reduced. The reduced spectrum of possible accidents limits the necessity to take measures requiring multiple damage control or survey teams in the Protected Area. During the initial stages of an accident, not all areas of the plant would be affected by releases of radioactive materials. Therefore, radiation protection coverage would not be required for all areas. Because entry is expected to be limited to those areas where maintenance necessary to maintain SFP cooling is required and the areas potentially affected by an accident involving the SFP are limited, there is a significant decrease in areas potentially requiring radiation protection coverage in a permanently shut down and defueled condition. If radiation protection coverage is deemed necessary, multiple emergency teams can be covered by each HP Technician. If radiation protection coverage is not provided (for entry into areas with low radiological risk or known radiological status), worker protection is ensured because emergency workers are required to wear electronic dosimeters (which will alarm at preset dose and dose rate setpoints) and because of the installed Area Radiation Monitors (ARMs) (which alarm locally and remotely at preset dose rates) located throughout the plant.

#### *3.2.1.4.4 Major Task: Chemistry/Radiochemistry*

##### Current Staffing Requirement

On-shift Chemistry Technician initially performs the task.

Augmentation of the on-shift Chemistry Technician by a Chemistry Technician within 60 minutes.

##### Proposed Change

Eliminate the on-shift Chemistry Technician

##### Analysis

The elimination of the on-shift Chemistry Technician position does not impact the ability of the on-shift ERO to perform emergency plan functions. Currently, the Chemistry Technician is an on-shift position per DAEC Emergency Plan Section 'B', Table B-1 to collect and analyze a liquid sample if the applicable radiation monitor is not available during a release, or as directed by the Operations Shift Manager.

Once the DAEC is shut down and permanently defueled, no chemistry/radio-chemistry job tasks are required within the first 60 minutes of any of the analyzed events. This is

consistent with draft NUREG 0654 Rev. 2, which does not include the Chemistry/Radio-Chemistry function in Table B.1 on-shift staffing for operating nuclear plants. “*Technical Analysis in Support of the Guidance in NUREG-0654/FEMA-REP-1*” for the draft Rev. 2 states:

“The Chemistry/Rad Chemistry function listed in Table B-1 to Revision 1 of the NUREG is no longer needed as the need for immediate reactor coolant sampling has been reduced due to the variety of plant indications of fuel damage available to licensees.”

This analysis for operating nuclear plants conservatively bounds plants in the permanently shut down and defueled condition. Therefore, the on-shift Chemistry Technician position can be eliminated.

### *3.2.1.5 Major Functional Area: Plant System Engineering, Repair and Corrective Actions*

#### *3.2.1.5.1 Major Tasks: Technical Support*

##### Current Staffing Requirement

The on-shift STA performs the major task of Technical Support.

Augmentation by the Reactor Engineer, Electrical Engineer and Mechanical Engineer within 60 minutes.

##### Proposed Change

Eliminate the on-shift STA position.

Transfer functions of the Reactor Engineer, Electrical Engineer and Mechanical Engineer ERO positions to the Technical and Engineering Supervisor (augmenting within 60 minutes).

##### Analysis

The STA performs independent assessments of plant operating concerns, technical support, appropriate corrective actions, analysis of events and their effects, effectiveness of response(s) to emergent conditions, classifications of emergencies, protection of the public, and any other actions related to critical safety functions and plant safety during abnormal and emergency situations. The STA also contributes to operations during normal plant conditions. By routine monitoring of equipment and plant operations, the STA can focus on preventative actions to mitigate the consequences of an accident.

Because of the permanent cessation of power operations and permanent removal of fuel from the reactor vessel, the STA position is no longer necessary for technical and analytical assistance. The Technical Support function will be assumed by the remaining Control Room personnel.

The analysis of proposed post-shutdown on-shift staffing concluded that the Operations Shift Manager and two (2) NCOs can perform any required technical analysis, until augmented by the TSC, in a timely manner and there are no collateral duties that would

prevent the timely performance of this task.

Currently, the function of the Reactor Engineer is to provide confirmation of adequacy of core cooling, maintenance of coolable core geometry, and to verify that actual plant response to the event is as expected. This function is initially performed by the STA under the guidance of the Operations Shift Manager. The Reactor Engineer position can be eliminated without increasing the risk to public health and safety because the major task of evaluating core/thermal hydraulics is not necessary in a permanently shut down and defueled condition.

The primary duties of the TSC Engineer positions include: responding to engineering requests from the Technical and Engineering Supervisor, evaluating the implementation of Severe Accident Management Guidelines, and assisting the OSC in preparing to send repair teams into the plant. These duties are either no longer necessary in a permanently shut down and defueled condition or will be performed by other members of the post-shutdown ERO.

The Technical and Engineering Supervisor is tasked with performing an engineering assessment of plant conditions and/or actions needed to mitigate damage to the plant. With respect to responding to engineering requests from the Technical and Engineering Supervisor, this function will continue to be performed by augmenting qualified engineering resources. The Technical and Engineering Supervisor will continuously evaluate the need for engineering resources and coordinate with the Admin Supervisor in the TSC to call in additional qualified engineering personnel. These individuals may be tasked with activities to be completed at engineering offices external to the TSC, called to report to the TSC, or directed to other facilities.

Engineering resources will continue to be available as augmented positions with specific training and qualification requirements for assigned personnel in accordance with the site training program. The required training courses and requalification frequencies will be unchanged in the post-shutdown condition. However, these positions will no longer be identified as on-call positions. The elimination of the TSC Engineer positions is justified because the spectrum of credible accidents and operational events, and the quantity and complexity of activities required for the safe storage of spent nuclear fuel is reduced as compared to an operating plant. The set of plant equipment required in the permanently shut down and defueled condition is also greatly reduced, which reduces the assessment and mitigation activities the TSC must perform.

#### *3.2.1.5.2 Major Tasks: Repair and Corrective Actions*

##### *Current Staffing Requirement*

The on-shift Auxiliary Operators perform the major task of Repair and Corrective Actions.

Augment with the OSC Supervisor, Mechanical Maintenance and Electrical Maintenance, within 60 minutes to perform repair and corrective actions.

Augment with Instrument & Control (I&C) Technician and an additional Electrical Maintenance Technician within 90 minutes to perform repair and corrective actions.

Proposed Change

Replace the on-shift Auxiliary Operators with NCOs.

Eliminate one (1) Electrical Maintenance Technician (augmenting within 90 minutes).

Analysis

Electrical Maintenance Technician duties include providing repairs and corrective actions for plant electrical equipment, as directed. The OSC Supervisor will continuously evaluate the need for resources and call in additional qualified personnel, as needed. OSC resources will continue to be augmented positions with specific training and qualification requirements for assigned personnel in accordance with the site training program. The required training courses and requalification frequencies will be unchanged in the post-shutdown condition. The elimination of the Electrical Maintenance Technician position described above is justified because the spectrum of credible accidents and operational events, and the quantity and complexity of activities required for the safe storage of spent nuclear fuel is reduced as compared to an operating plant. The set of plant equipment required in the permanently shut down and defueled condition is also greatly reduced, which reduces the assessment and mitigation activities the OSC must perform. Additionally, the elimination of credible accidents involving an operating reactor provides additional time to plan and execute assessment and mitigation actions.

3.2.1.6 *Major Functional Area: Protective Actions*

3.2.1.6.1 *Major Tasks: Radiation Protection: Access Control, HP Coverage, Habitability, and Dosimetry*

Current Staffing Requirement

Two on-shift HP Technicians perform the in-plant protective actions. These tasks can be performed by personnel assigned other functions.

Augmentation of the on-shift HP Technicians by one HP Technician within 60 minutes and two additional HP Technicians within 90 minutes.

Proposed Change

Reduce the on-shift HP Technician positions from two (2) to one (1).

Reduce the 90-minute augmenting HP Technician positions from two (2) to one (1).

Analysis

The function of these resources is to provide radiation protection oversight of the on-shift complement of personnel and augmented personnel who are expected to respond to emergency events for damage repair, corrective actions, search and rescue, first aid, firefighting and personnel monitoring. They can also be expected to provide for access control and the issuance of dosimetry.

DAEC will no longer be an operating nuclear power plant. In accordance with 10 CFR 50.82(a)(1), pursuant to 10 CFR 50.82(a)(2), the Part 50 license will no longer authorize

operation of the reactor or emplacement or retention of fuel in the reactor vessel. With irradiated fuel being stored in the SFP and ISFSI, the spectrum of credible accidents and operational events, and the quantity and complexity of activities required for the safe storage of spent nuclear fuel is reduced as compared to an operating plant. The risk in the permanently shut down and defueled condition is significantly reduced because many of the potential initiating conditions that would lead to an emergency declaration will no longer be possible and the elimination of credible accidents involving an operating reactor provides additional time to plan and execute assessment and mitigation actions. If additional resources are determined to be necessary during an emergency, DAEC maintains the necessary staffing to provide sufficient personnel trained in radiation protection to respond and perform the required actions, if necessary, in the post-shutdown condition.

During a declared emergency, Radiation Work Permits (RWPs) and dose set points will change depending on the emergency and plant conditions. Both systems have been used by plant workers for several years. Worker dose margins and training qualifications are also automatically verified when the RWP access control system is used. If a worker's dose margin is inadequate or training is expired, the worker's access would be precluded and the access control system would not allow issuance of an electronic dosimeter. In an emergency, approval to exceed dose margins is required. During the log-in process, workers acknowledge their electronic dosimeter alarm set points and that they have read and understand their RWP. The electronic dosimeter provides the worker with a continuous status of dose received and work area dose rates, and will alarm at preset dose and dose rates. Worker use of electronic dosimeters facilitates more efficient use of HP Technicians to provide radiation protection coverage while preserving the As Low As Reasonably Achievable (ALARA) concept. Access control is maintained because the worker must obtain an electronic dosimeter and enter a radiation work permit number into the access control computer system prior to being allowed access into the Radiologically Controlled Area (RCA). No setup is required for the RWP access control computers, which allows HP Technicians to be used for more critical tasks during emergency response. Personnel are required to self-monitor for radioactive contamination whenever they exit the RCA. No radiation protection involvement is necessary for this contamination monitoring activity because workers are trained to perform this task without supervision or oversight. However, contaminated personnel exiting the RCA will require radiation protection oversight.

The analysis of proposed post-shutdown staffing concluded that in a permanently shut down and defueled condition, HP Technicians can perform this required action in a timely manner and there are no collateral duties that would prevent the timely performance of this task.

Radiation protection coverage will only be performed if the radiological status of a room is unknown and there is a definitive need for emergency workers to enter the room to perform a task. The decision to provide radiation protection coverage may be based on plant radiological conditions as indicated by installed ARMs.

During the initial stages of an accident, not all areas of the plant would be affected by releases of radioactive materials. Therefore, radiation protection coverage would not be required for all areas. Because entry is expected to be limited to those areas where maintenance necessary to maintain SFP cooling is required and the areas potentially affected by an accident involving the SFP are limited, there is a significant decrease in

areas potentially requiring radiation protection coverage in a permanently shut down and defueled condition. If radiation protection coverage is deemed necessary, multiple emergency teams can be covered by the on-shift HP Technician. If radiation protection coverage is not provided (for entry into areas with low radiological risk or known radiological status), worker protection is ensured because emergency workers are required to wear electronic dosimeters (which will alarm at preset dose and dose rate set points) and because of the installed ARMs (which alarm locally and remotely at preset dose rates) located throughout the plant.

Tasks requiring the issuance of dosimetry are not expected in the initial stages of an event, but during the recovery phase. Prior to self-issuance of dosimetry, workers are assigned a RWP, set points are adjusted, and briefings are conducted by radiation protection.

The analysis of proposed post-shutdown on-shift staffing determined there are no time critical radiation protection or chemistry tasks, and that task performance is directed and prioritized by the Operations Shift Manager for the 90-minute time frame used in the analysis. There are no overlapping radiation protection or chemistry tasks. Radiation protection tasks could be performed without augmented personnel in the 90-minute time frame used in the analysis.

Activities related to the conduct of surveys or radiological assessment of the area surrounding DAEC are performed by the Field Team Members identified in the Offsite Surveys Major Task of Table B-1 of the DAEC Emergency Plan, independent of the augmenting HP Technician positions.

DAEC proposes reducing the number of augmenting HP Technicians listed in the Major Functional Area of Protective Actions in Table B-1 of the DAEC Emergency Plan from three (3) to two (2). As previously described, the spectrum of credible accidents and operational events, and the quantity and complexity of activities required for the safe storage of spent nuclear fuel is reduced as compared to an operating plant. The risk in the permanently shut down and defueled condition is significantly reduced because many of the potential initiating conditions that would lead to an emergency declaration will no longer be possible and the elimination of credible accidents involving an operating reactor provides additional time to plan and execute assessment and mitigation actions.

#### 3.2.1.7 *Major Functional Area: Fire Fighting*

##### Current Staffing Requirement

The DAEC Fire Brigade complement currently consists of five (5) responders, one of which acts as the Plant Fire Brigade Leader.

##### Proposed Change

No changes in staffing are proposed.

##### Analysis

DAEC proposes no staffing changes to the Fire Fighting Major Functional Area.

3.2.1.8 *Major Functional Area: Rescue Operations and First Aid*

Current Staffing Requirement

On-shift personnel initially perform the task.

Augmentation by on-call ambulance service.

Proposed Change

No changes in staffing are proposed.

Analysis

DAEC proposes no staffing changes to the Rescue Operations and First Aid Major Functional Area.

3.2.1.9 *Major Functional Area: Site Access Control and Personnel Accountability*

*Major Tasks: Security, Communications, Personnel Accountability*

Current Staffing Requirement

Staffing in accordance with Technical Specifications and DAEC procedures.

Proposed Change

No changes in Security staffing are proposed.

Analysis

DAEC proposes no staffing changes to the Site Access Control and Personnel Major Functional Area.

3.2.2 ERO Staffing

Prior to an emergency declaration, the normal plant operating organization is in place. The initial classification of an off-normal event and declaration are performed by the Operations Shift Manager. Upon the classification and declaration of an emergency, the Operations Shift Manager assumes the role of Emergency Coordinator and retains that role until another designated Emergency Coordinator can assume control. Following implementation of the changes described in this amendment, the command and control function will reside with the Operations Shift Manager. The onsite emergency organization is activated by personnel notification or when the station alarm is sounded and the emergency is announced over the public-address system. Initially, the ERO consists of the normal operating shift personnel who function as the emergency team members. The normal operating staff is augmented by qualified plant personnel. Those personnel onsite respond when the station alarm is sounded and the announcement is made or when individuals are notified by another means. Personnel not onsite during off-hours operations will be notified via an ERO notification system. A designated on-shift plant employee shall perform notifications.

In the permanently shut down and defueled condition, DAEC will continue to maintain ERO teams to respond to an emergency declaration. When the Operations Shift Manager directs the activation of the ERO call out system, ERO members are notified to ensure adequate coverage of ERO positions at each ERF. ERO members not on-call are expected to respond unless they are unavailable.

DAEC requires ERO personnel to act promptly in reporting to their assigned ERF even when not on duty. During duty periods, procedures further require that team members respond within the required response time for their ERF (unless a longer time frame is specified for their specific ERO position) and that they remain fit for duty throughout the duty assignment. Individuals are trained to respond to their ERF even if they are not on duty. Excess personnel that respond may be assigned support responsibilities or be designated as a relief shift. This conservative policy ensures timely activation because some off-duty personnel may respond sooner than the on-duty personnel.

The proposed revisions to the DAEC Emergency Plan will not change the requirements described above. Management's continued expectation is that all duty and support ERO members report to their respective ERF as quickly as possible. All ERO personnel are expected to respond when notified by the ERO notification system. Each current ERO position is identified, and the associated duties are captured, in the ERO Task Analysis provided in Attachment 4. Each of the positions proposed for elimination was analyzed to identify the key duties associated with the position and the duties were then evaluated against the planning standards in NUREG-0654.

The Table provided in Attachment 4 contains columns with headings "Justification / Implementing Action" and "Tasks Transferred to." These columns provide the details regarding the disposition of each task. Some of the duties are identified as being eliminated because they become unnecessary following permanent cessation of power operations and permanent removal of fuel from the reactor vessel. Other duties are identified as eliminated because the duties are performed redundantly by other positions in the ERO and will continue to be performed by these positions in the post-shutdown ERO.

Procedures and training materials depicting the changes presented in Attachment 4 will be developed to align with the revised task assignments. These procedures will be used to support training of post-shutdown ERO staff.

The proposed changes to the DAEC Emergency Plan have been discussed with the representatives from each Offsite Response Organization (ORO). Potential impacts on the ability of State of Iowa and local response organizations to effectively implement their FEMA-approved Radiological Emergency Plans do not exist because no tasks that require interfacing with State of Iowa and local response organizations are proposed for elimination.

**Table 1-Proposed Post-Shutdown ERO Staffing**

<b>Current DAEC Augmented ERO Positions</b>	<b>Proposed Post-Shutdown Augmented ERO Positions<sup>1</sup></b>	<b>Justification for Elimination<sup>2</sup></b>
<b>Technical Support Center</b>		
Emergency Coordinator	Emergency Coordinator	N/A – position retained
TSC Operations Supervisor	--	No remaining functions
Reactor Engineer	--	No remaining functions
TSC Operations Liaison	TSC Operations Liaison	N/A – position retained
Tech and Analysis Engineer	--	No remaining functions
TSC Communicator	TSC Communicator	N/A – position retained
Technical and Engineering Supervisor	Technical and Engineering Supervisor	N/A – position retained
IC / EM Engineer	--	Tasks transferred
Mechanical Engineer	--	Tasks transferred
NRC ENS Communicator	NRC ENS Communicator	N/A – position retained
Site Radiation Protection Coordinator	Site Radiation Protection Coordinator	N/A – position retained
Radiological Support Staff	Radiological Support Staff	N/A – position retained
MIDAS Operator	MIDAS Operator	N/A – position retained
Field Team Director	Field Team Director	N/A – position retained
NRC HPN Communicator	NRC HPN Communicator	N/A – position retained
Security and Support Supervisor	Security and Support Supervisor	N/A – position retained
Security Force	Security Force	N/A – position retained
Admin Supervisor	Admin Supervisor	N/A – position retained
TSC Clerical	TSC Clerical	N/A – position retained
Information Service Rep	Information Service Rep	N/A – position retained
<b>Operations Support Center</b>		
OSC Supervisor	OSC Supervisor	N/A – position retained
HP Supervisor	HP Supervisor	N/A – position retained
IC/EM Supervisor	--	Tasks transferred
Mechanical Supervisor	--	Tasks transferred
Technicians (1 Chemistry, 9 HPs, 1 Mechanical, 2 Electrical, 1 I&C)	Technicians (1 Chemistry, 5 HPs, 1 Mechanical, 1 Electrical, 1 I&C)	Tasks transferred
Offsite Radiological Assembly Area Staff	Offsite Radiological Assembly Area Staff	N/A – position retained
OSC Staff (RW)	OSC Staff (RW)	N/A – position retained
<b>Emergency Operations Facility</b>		
Emergency Response and Recovery Director	Emergency Response and Recovery Director	N/A – position retained
EOF / Ops Liaison	EOF / Ops Liaison	N/A – position retained
Rad & EOF Manager	Rad & EOF Manager	N/A – position retained
NRC HPN Communicator	NRC HPN Communicator	N/A – position retained

<b>Current DAEC Augmented ERO Positions</b>	<b>Proposed Post-Shutdown Augmented ERO Positions<sup>1</sup></b>	<b>Justification for Elimination<sup>2</sup></b>
<b>Emergency Operations Facility cont'd</b>		
Radiological Assessment Coordinator	Radiological Assessment Coordinator	N/A – position retained
Field Team Director	Field Team Director	N/A – position retained
MIDAS Operator	MIDAS Operator	N/A – position retained
Communicators / Messengers / Recorders	Communicators / Messengers / Recorders	N/A – positions retained
Information Services Rep	Information Services Rep	N/A – position retained
State / County Technical Liaisons	State / County Technical Liaisons	N/A – position retained
Support Services Coordinator	Support Services Coordinator	N/A – position retained
<b>Joint Information Center</b>		
Joint Information Center Manager	Joint Information Center Manager	N/A – position retained
Site Spokesperson / JIC Technical Liaison	Site Spokesperson / JIC Technical Liaison	N/A – position retained
Assistance JIC Manager	Assistance JIC Manager	N/A – position retained
Corporate Coordination / Support	Corporate Coordination / Support	N/A – position retained
News Media Rumor Control	News Media Rumor Control	N/A – position retained
211 Call Center Manager	211 Call Center Manager	N/A – position retained
Media Host	Media Host	N/A – position retained
EOF / JIC Shared Services (Support Services Coordinator, Info Services Rep, Communicators / Messengers, Recorders)	EOF / JIC Shared Services (Support Services Coordinator, Info Services Rep, Communicators / Messengers, Recorders)	N/A – position retained

<sup>1</sup> A dash (--) indicates that the position is being proposed for elimination upon implementation of the Post-Shutdown Emergency Plan.

<sup>2</sup> Detailed information regarding the proposed elimination of each position is provided in sections 3.2.2.1 through 3.2.2.3 and in Attachment 4.

The intent of Table 1 is to compare the current augmented ERO positions against the proposed post-shutdown ERO positions. As an example, the Reactor Engineer is a position that is proposed for elimination in the post-shutdown ERO, because in a permanently shut down and defueled condition, the responsibilities associated with a reactor core no longer need to be maintained. The proposed elimination of augmented ERO positions is described in greater detail in the following sections. The proposed elimination of ERO positions that are identified in procedures as typical minimum staffing positions to declare the ERFs operational are described in greater detail. Other augmented ERO positions proposed for elimination, but not identified in procedure as typical minimum staffing positions to declare the ERFs operational, are also addressed in the following sections.

Additional analysis for each of the augmented ERO staffing changes that impact the content of DAEC Emergency Plan Table B-1 was previously addressed by Major Functional Areas in

Sections 3.2.1.1 through 3.2.1.9.

Attachment 4 contains an analysis of all augmented ERO positions proposed for elimination and evaluates the transfer of tasks to remaining augmented ERO positions following permanent cessation of power operations and permanent removal of fuel from the reactor vessel.

#### 3.2.2.1 Technical Support Center

The TSC has been designed to meet the intent of the guidance in NUREG-0696, "Functional Criteria for Emergency Response Facilities," and the clarification in NUREG-0737, Supplement 1, "Clarification of TMI Action Plan Requirements," as applicable. Following permanent cessation of power operations and permanent removal of fuel from the reactor vessel, the TSC will continue to be located on the ground floor of the Data and Acquisition Center (DAC). The proposed changes to the DAEC Emergency Plan do not involve any physical modifications to, or layout/configuration changes in, the TSC.

The current DAEC Emergency Plan and ERO staffing is intended to address the risks to public health and safety inherent in an operating reactor. The risk in the permanently shut down and defueled condition is significantly reduced because many of the potential initiating conditions that would lead to an emergency declaration will no longer be possible.

The proposed staffing changes eliminate one ERO position in the TSC described in procedure as typical minimum staffing that could be necessary to declare the TSC operational:

- Core/Thermal Hydraulic, or Reactor Engineer.

The following TSC positions are also proposed for elimination following permanent cessation of power operations and permanent removal of fuel from the reactor vessel:

- TSC Engineers (IC/EM, Mechanical, Tech and Analysis)
- TSC Operations Supervisor

#### Reactor Engineer

The primary duties of the Reactor Engineer include: monitoring plant conditions for indication of core damage, providing support to the operations crew in the Control Room and the EC in the TSC, making recommendations for returning the reactor core to a safe and stable condition, determining the amount of failed fuel and providing that information to the TSC Operations Supervisor, obtaining vendor feedback on the amount of failed fuel, tracking and reporting that minimum staffing has been achieved and acting as a member of the TSC accident team. In a permanently shut down and defueled condition, responsibilities associated with a reactor core no longer need to be maintained. Elimination of the Reactor Engineer position will have no effect on emergency response in a permanently shut down and defueled condition because the position is not required to assess the condition of fuel in the SFP during an emergency. The Reactor Engineer position can be eliminated without increasing the risk to public health and safety because the major task of evaluating core/thermal hydraulics is not necessary or possible in a permanently shut down and defueled condition.

#### TSC Engineers (IC/EM, Mechanical, Tech and Analysis)

The primary duties of the TSC Engineer positions include responding to engineering requests from

the Technical and Engineering Supervisor, evaluating the implementation of Severe Accident Management Guidelines, and assisting the OSC in preparing to send repair teams into the plant. These duties are either no longer necessary in a permanently shut down and defueled condition or will be performed by the Technical and Engineering Supervisor.

The Tech and Analysis Engineer is tasked with performing an engineering assessment of plant conditions and/or actions needed to mitigate damage to the plant and was added as part of Duane Arnolds voluntary implementation of Severe Accident Management Guidelines (SAMGs). SAMGs will no longer be required once the plant is permanently shutdown and defueled.

In the permanent shut down and defueled condition, the Technical and Engineering Supervisor would have the necessary qualifications, expertise, and capabilities to perform an engineering assessment of plant conditions and/or actions needed to mitigate damage to the plant in response to a fuel handling accident or an event resulting in damage to the SFP integrity or the loss of SFP cooling or inventory.

With respect to responding to engineering requests from the Technical and Engineering Supervisor, this function will continue to be performed by augmenting qualified engineering resources. The Technical and Engineering Supervisor will continuously evaluate the need for engineering resources and coordinate with the Admin Supervisor in the TSC to call in qualified engineering personnel. These individuals may be tasked with activities to be completed at engineering offices external to the TSC, called to report to the TSC, or directed to other facilities.

Engineering resources will continue to be available as augmenting positions with specific training and qualification requirements for assigned personnel in accordance with the site training program. However, these positions will no longer be identified as on-call positions. The elimination of the TSC Engineer positions is justified because the spectrum of credible accidents and operational events, and the quantity and complexity of activities required for the safe storage of spent nuclear fuel is reduced as compared to an operating plant. The set of plant equipment required in the permanently shut down and defueled condition is also greatly reduced, which reduces the assessment and mitigation activities the TSC must perform.

#### TSC Operations Supervisor

The primary function of the TSC Operations Supervisor is to provide support for the Control Room and to direct action associated with Severe Accident Management. The position was added as part of the plant's voluntary implementation of SAMGs. In a permanently shut down and defueled condition, the requirement for severe accident management no longer exists. The TSC Operations Supervisor position can be eliminated without increasing the risk to public health and safety because the major task of evaluating severe accidents and taking mitigating actions for these conditions are not necessary or possible in a permanently shut down and defueled condition.

In summary, the spectrum of credible accidents and operational events, and the quantity and complexity of activities required for the safe storage of spent nuclear fuel is reduced as compared to an operating plant. The set of plant equipment required in the permanently shut down and defueled condition is also greatly reduced, which reduces the assessment and mitigation activities the TSC must perform. Therefore, TSC Operations Supervisor, Reactor Engineer, Tech and Analysis Engineer, IC/EM Engineer and Mechanical Engineer can be eliminated without placing an undue burden on the remaining ERO positions in the TSC. The proposed ERO staffing reductions at the TSC discussed above continue to address the risks to public health and safety, comply with

the DAEC Emergency Plan, site commitments, and applicable regulations.

### 3.2.2.2 Operations Support Center

The OSC has been designed to meet the intent of the guidance in NUREG-0696, "Functional Criteria for Emergency Response Facilities," and the clarification in NUREG-0737, Supplement 1, "Clarification of TMI Action Plan Requirements," as applicable. Following permanent cessation of power operations and permanent removal of fuel from the reactor vessel, the OSC will continue to be located on the ground floor of the Data Acquisition Center next to the TSC. The proposed changes to the DAEC Emergency Plan do not involve any physical modifications to, or layout/configuration changes in, the OSC.

The OSC Supervisor is responsible for ensuring adequate staffing of the OSC to support the emergency; working with the EC to set priorities for the OSC and directing the activities of the OSC to support the emergency response. If at any time the OSC Supervisor determines additional manpower is necessary to accomplish the mission of the OSC, the OSC Supervisor will contact the Admin Supervisor in the TSC to arrange for augmentation by additional personnel to support the emergency response functions of the OSC.

In the permanently shut down and defueled condition, the primary functions of the OSC will remain dispatching of, and accounting for, Repair and Corrective Action Teams and dispatching of Onsite and Offsite Monitoring Teams. The OSC Craft functions will continue to be performed by qualified augmenting resources. The OSC Supervisor will continue to continuously evaluate the need for resources and coordinate with the Admin Supervisor in the TSC to call in additional assistance. OSC resources will continue to be augmented positions with specific training and qualification requirements for assigned personnel in accordance with the site training program. The required training courses and requalification frequencies will be unchanged in the post-shutdown condition.

The proposed staffing changes do not eliminate any ERO positions in the OSC described in procedures as typical minimum staffing that could be necessary to declare the OSC activated.

The following OSC positions are proposed for elimination following permanent cessation of power operations and permanent removal of fuel from the reactor vessel:

- IC/EM Supervisor
- Mechanical Supervisor

#### Maintenance Supervisors (IC/EM and Mechanical)

The elimination of the Maintenance Supervisor positions at the OSC does not impact the capabilities of the on-shift staffing or augmented response. The spectrum of events that would require repair activities are significantly lower in a permanently shut down and defueled condition. The tasks of the supervisors will be transferred to the OSC Supervisor without placing undue burden on the remaining OSC positions in the OSC and without increasing the risk to the public health and safety.

Additionally, the proposed staffing changes eliminate one (1) augmenting Electrical Maintenance Technician. This position is included in DAEC Table B-1 as an augmenting responder and is addressed in Section 3.2.1.6. Electrical Maintenance Technician duties include providing repairs and corrective actions for plant electrical equipment, as directed. The spectrum of credible accidents and operational events, and the quantity and complexity of activities required for the safe

storage of spent nuclear fuel is reduced as compared to an operating plant. The duties and coverage required for these positions are reduced.

In the permanently shut down and defueled condition, the spectrum of credible accidents and operational events, and the quantity and complexity of activities required for the safe storage of spent nuclear fuel is reduced as compared to an operating plant. The primary events of concern in the immediate post-shutdown and defueled condition will be a FHA and a loss of SFP cooling and/or water inventory. Events involving a loss of SFP cooling and/or water inventory can be addressed by implementation of SFP inventory makeup strategies required under 10 CFR 50.54(hh)(2). These capabilities will continue to be maintained as a license condition. OSC staff is not relied upon to implement SFP inventory makeup.

Restoration of equipment supporting SFP cooling and inventory will be the primary focus of emergency mitigation actions for the TSC and OSC in a permanently shut down and defueled condition. Although ERO activation/response time requirements will be unchanged, the elimination of credible accidents involving an operating reactor provides additional time to plan and execute assessment and mitigation actions. The proposed changes do not impact the capability to assess and monitor actual or potential offsite consequences of a radiological emergency or provide information to offsite authorities in a timely manner. Therefore, the IC/EM Supervisor and Mechanical Supervisor positions can be eliminated without placing an undue burden on the remaining ERO positions in the OSC and without increasing the risk to public health and safety.

In summary, the proposed ERO staffing reductions at the OSC discussed above continue to address the risks to public health and safety, comply with the DAEC Emergency Plan, site commitments, and applicable regulations.

### 3.2.2.3 Emergency Operations Facility

The EOF functions to maintain overall management of DAEC's emergency response and recovery resources; evaluate, coordinate, and communicate emergency response activities with Federal, State of Iowa, and local emergency response organizations; evaluate offsite accident conditions; and make recommendations to offsite agencies regarding protective actions. State of Iowa representatives are provided space and communications at the EOF and staff this facility at an Alert or higher classification. There are no proposed changes to EOF staffing.

## 3.3 Summary

NEDA performed an analysis to evaluate the ability of the proposed post-shutdown on-shift staffing to implement all regulatory required emergency plan functions in conjunction with the postulated accidents that will be applicable in the permanently shut down and defueled condition. Additionally, an evaluation of all augmented ERO positions was performed to analyze the transfer of tasks from those positions proposed for elimination to remaining augmented ERO positions following permanent cessation of power operations and permanent removal of fuel from the reactor.

The proposed ERO staffing changes do not impact the capabilities of the on-shift staffing or augmented response. The ERFs will continue to be activated within 60 minutes of an Alert or higher declaration. The remaining post-shutdown functional responsibilities of the positions proposed for elimination are being reassigned to remaining positions. The proposed augmented ERO staffing reductions continue to address the risks to public health and safety, and comply with site commitments and applicable regulations.

## 4.1 REGULATORY EVALUATION

### 4.2 Applicable Regulatory Requirements/Criteria

10 CFR 50.47(b)(1) states in part that: *"...each principal response organization has staff to respond and to augment its initial response on a continuous basis."*

10 CFR 50.47(b)(2) states in part that: *"...adequate staffing to provide initial facility accident response in key functional areas is maintained at all times," and that "timely augmentation of response capabilities is available ...."*

10 CFR 50, Appendix E, Section IV, Part A, "Organization," it states in part that: *"...The organization for coping with radiological emergencies shall be described, including definition of authorities, responsibilities, and duties of individuals assigned to the Licensee's emergency organization ...."*

10 CFR 50, Appendix E, Section IV.A.1: [Emergency Plans must contain] *"A description of the normal plant operating organization."*

10 CFR 50, Appendix E, Section IV.A.2: [Emergency Plans must contain] *"A description of the onsite emergency response organization (ERO) with a detailed discussion of:*

- *Authorities, responsibilities, and duties of the individual(s) who will take charge during an emergency;*
- *Plant staff emergency assignments;*
- *Authorities, responsibilities, and duties on an onsite emergency coordinator who shall be in charge of the exchange of information with offsite authorities responsible for coordinating and implementing offsite emergency measures."*

10 CFR 50, Appendix E, Section IV.A.9 states that licensees shall perform *"...a detailed analysis demonstrating that on-shift personnel assigned emergency plan implementation functions are not assigned responsibilities that would prevent the timely performance of their assigned functions as specified in the emergency plan."*

NUREG-0654/FEMA -REP-1, Revision 1 (Reference 6.4) was published to provide specific acceptance criteria for complying with the standards set forth in 10 CFR 50.47. Regulatory Guide 1.101 (Reference 6.5) endorsed Revision 1 of NUREG-0654/FEMA -REP-1. These criteria provide a basis for NRC licensees and State and local governments to develop acceptable radiological emergency plans and preparedness.

In NUREG-0654, Section II, "Planning Standards and Evaluation Criteria," Evaluation Criteria II.B.1 and II.B.5 address the 10 CFR 50.47(b)(2) planning standard. Evaluation Criterion II.B.1 specifies the on-site emergency organization of plant staff personnel for all shifts, and its relation to the responsibilities and duties of the normal shift complement. Evaluation Criterion II.B.5 states in part that:

*Each licensee shall specify the positions or title and major tasks to be performed by the persons to be assigned to the functional areas of emergency activity. For emergency situations, specific assignments shall be made for all shifts and for plant staff members, both on-site and away from the site. These assignments shall cover the emergency functions in Table B-1 entitled, "Minimum Staffing Requirements for Nuclear Power Plant Emergencies." The minimum on-shift staffing levels shall be as indicated in Table B-1. The licensee must be*

*able to augment on-shift capabilities within a short period after declaration of an emergency. This capability shall be as indicated in Table B-1.*

NEI 10-05, Revision 0, "Assessment of On-Shift Emergency Response Organization Staffing and Capabilities" (Reference 6.5) was developed to establish a standard methodology for licensees to perform analyses of the ability of on-shift staff to perform all required functions and tasks necessary to respond to a declared emergency. Licensees are able to use this methodology as an acceptable method to meet the requirement of 10 CFR 50, Appendix E, Section IV.A.9.

NSIR/DPR-ISG-01, "Interim Staff Guidance - Emergency Planning for Nuclear Power Plants" (Reference 6.7) provides information relevant to performing the on-shift staffing analysis. The ISG states that NEI 10-05, "Assessment of On-Shift Emergency Response Organization Staffing and Capabilities," is an acceptable methodology for performing the staffing analysis. The ISG also indicates that the completed staffing analyses are required to be part of the emergency plan and the results documented and submitted to the NRC in accordance with 10 CFR 50.54(q)(5).

#### 4.3 Precedent

The requested changes to the on-shift staffing and ERO staffing are similar in nature to the post-shutdown changes implemented by other licensees, including Pilgrim (ML18023A691), Fort Calhoun (ML17123A348) and Oyster Creek (ML17356A213).

#### 4.4 No Significant Hazards Consideration Determination

The proposed changes would revise the DAEC Emergency Plan to reduce the number of on-shift and ERO positions commensurate with the hazards associated with a permanently shut down and defueled facility.

NEDA has evaluated whether or not a significant hazards consideration is involved with the proposed amendment by focusing on three standards set forth in 10 CFR 50.92, "Issuance of amendment," as discussed below:

1. **Does the proposed amendment involve a significant increase in the probability or consequences of an accident previously evaluated?**

Response: No.

The proposed changes to the DAEC Emergency Plan do not impact the function of plant Structures, Systems, or Components (SSCs). The proposed changes do not involve the modification of any plant equipment or affect plant operation. The proposed changes do not affect accident initiators or precursors, nor do the proposed changes alter design assumptions. The proposed changes do not prevent the ability of the on-shift staff and ERO to perform their intended functions to mitigate the consequences of any accident or event that will be credible in the permanently defueled condition. The proposed changes only remove positions that will no longer be needed or credited in the Emergency Plan in the permanently defueled condition.

Therefore, the proposed changes do not involve a significant increase in the probability or consequences of an accident previously evaluated.

2. **Does the proposed amendment create the possibility of a new or different kind of**

**accident from any accident previously evaluated?**

Response: No.

The proposed changes reduce the number of on-shift and ERO positions commensurate with the hazards associated with a permanently shut down and defueled facility. The proposed changes do not involve installation of new equipment or modification of existing equipment, so that no new equipment failure modes are introduced. Additionally, the proposed changes do not result in a change to the way that the equipment or facility is operated so that no new accident initiators are created.

Therefore, the proposed changes do not create the possibility of a new or different kind of accident from any previously evaluated.

**3. Does the proposed amendment involve a significant reduction in a margin of safety?**

Response: No.

Margin of safety is associated with confidence in the ability of the fission product barriers (i.e., fuel cladding, reactor coolant system pressure boundary, and containment structure) to limit the level of radiation dose to the public. The proposed changes do not adversely affect existing plant safety margins or the reliability of the equipment assumed to operate in the safety analyses. There are no changes being made to safety analysis assumptions, safety limits, or limiting safety system settings that would adversely affect plant safety as a result of the proposed changes. The proposed changes are associated with the Emergency Plan and staffing and do not impact operation of the plant or its response to transients or accidents. The proposed changes do not affect the Technical Specifications. The proposed changes do not involve a change in the method of plant operation, and no accident analyses will be affected by the proposed changes. Safety analysis acceptance criteria are not affected by the proposed changes and margins of safety are maintained. The revised Emergency Plan will continue to provide the necessary response staff with the proposed changes.

Therefore, the proposed changes do not involve a significant reduction in a margin of safety.

Based on the above, NEDA concludes that the proposed amendment presents no significant hazards consideration under the standards set forth in 10 CFR 50.92(c), and, accordingly, a finding of "no significant hazards consideration" is justified.

**4.5 Conclusion**

In conclusion, based on the considerations discussed above, (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with Commission's regulations, and (3) the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public.

**5.0 ENVIRONMENTAL CONSIDERATION**

The proposed amendment involves reducing the on-shift and augmented ERO staffing levels commensurate with those required in a post-shutdown and permanently defueled condition. The

proposed amendment does not involve (i) a significant hazards consideration, or (ii) authorize a significant change in the types or a significant increase in the amounts of any effluent that may be released offsite, or (iii) result in a significant increase in individual or cumulative occupational radiation exposure. Accordingly, the proposed amendment meets the eligibility criterion for a categorical exclusion set forth in 10 CFR 51.22(c)(9). Therefore, pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the proposed amendment.

## **6.0 REFERENCES**

- 6.1 Letter from Mano K. Nazar, NextEra Energy Duane Arnold, LLC to U.S. Nuclear Regulatory Commission - "Duane Arnold Energy Center - Certification of Permanent Cessation of Power Operations," dated January 18, 2019, (ADAMS Accession No. ML19023A196).
- 6.2 Letter from Dean Curtland, NextEra Energy Duane Arnold, LLC to U.S. Nuclear Regulatory Commission - "Request for Approval of Certified Fuel Handler Training Program," dated January 29, 2019, (ML19037A016).
- 6.3 Letter from Dean Curtland, NextEra Energy Duane Arnold, LLC to U.S. Nuclear Regulatory Commission - "License Amendment Request (TSCR-181): Application to Align Technical Specification Staffing and Administrative Requirements for Permanently Defueled Condition," to be submitted in 2019.
- 6.4 NUREG-0654, FEMA-REP-1, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants," Revision 1, published November 1980
- 6.5 Regulatory Guide 1.101, "Emergency Planning and Preparedness for Nuclear Power Reactors," Revision 3, August 1992.
- 6.6 NEI 10-05, Rev. 0, "Assessment of On-Shift Emergency Response Organization Staffing and Capabilities," June 2011.
- 6.7 NSIR/DPR-ISG-01, "Interim Staff Guidance - Emergency Planning for Nuclear Power Plants," Revision 0, November 2011 (ML113010523).

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## **1.0 PURPOSE**

- (1) This section describes the responsibilities of Duane Arnold as the principal response organizations for radiological events that may occur at the Duane Arnold Energy Center (DAEC).

## **2.0 REQUIREMENTS**

### **2.1 RESPONSE ORGANIZATIONS AND RESPONSIBILITIES**

- (1) The DAEC Emergency Response Organization (ERO) provides immediate response to an emergency condition at the DAEC and promptly informs local, state, and federal officials of the situation and potential ramifications. Provisions have been made to augment the overall organization with additional personnel who possess unique technical capabilities, as well as industry and governmental agency support groups which can provide assistance in engineering and radiological dose assessment activities.
- (2) The resources available from within Duane Arnold, coupled with those available from other utilities and industry service and support firms, will be sufficient to enable continuous response over the long term. These resources ensure a 24-hour per day operations capability for an extended period.
- (3) Local and State Agencies
  - (a) County and state Radiological Emergency Response Plans, compatible with the DAEC Emergency Plan, have been developed to guide the emergency response actions of the officials and agencies of Linn County, Benton County, and the State of Iowa. These plans reflect the assignment of responsibilities for offsite protective actions and the methods of communicating among the involved local and state agencies. Offsite protective actions within the plume exposure pathway Emergency Planning Zone (EPZ) are implemented by Linn and Benton Counties.

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## 2.2 CONCEPT OF OPERATIONS

- (1) The emergency classification system and levels of activation are discussed in Section 'D'. Section 'E' discusses notification methods and procedures. This section and the remainder of the plan discuss the specific responsibilities and interrelationships of the emergency response organizations. The following summarizes the order of actions.

### (a) NOTIFICATION OF UNUSUAL EVENT

- (i) Upon occurrence of an event that is classified as a NOTIFICATION OF UNUSUAL EVENT, the Operations Shift Manager/~~Supervisor~~ will direct prompt corrective action to ensure the plant is placed in or maintained in a stable condition. Key Duane Arnold officials as well as individuals from the NRC, local and state emergency response organizations will be notified. Support agencies such as the local fire departments, hospitals, etc., will be alerted as indicated in county emergency response plans. Should the event be of such a nature that escalation to a higher emergency action level is probable, local and state officials and agencies will be notified to stand by for full activation.

### (b) ALERT, SITE AREA EMERGENCY, or GENERAL EMERGENCY

- (i) Upon occurrence of an event classified as an ALERT, SITE AREA EMERGENCY, or GENERAL EMERGENCY, the Operations Shift Manager/~~Supervisor~~ will direct prompt corrective action to return the plant to a stable condition and to stop or mitigate radiological releases, if they are occurring. Key Duane Arnold officials as well as individuals from local and state emergency response organizations will be notified of the event and nature of the emergency, including its classification.
- (ii) Communications will be established and maintained with these local and state agencies as described in Sections B and F to assure the flow of information necessary to assess the situation and protect the population at risk. Assessment actions will be implemented based upon the type of event and plant status to determine the potential consequences to the population at risk. The results of the assessment will be reported to local and state officials and will form the basis for decisions associated with the proper course of protective action.

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### 2.3 RESPONSE ORGANIZATIONS INTERRELATIONSHIPS

- (1) The interrelationships between Duane Arnold, contractors and consultants, and local, state, and federal agencies are illustrated in Figure A-1 and are described below.
  - (a) DAEC
    - (i) Duane Arnold's relationship to the total effort includes the following:
      - (a) Assessing the scope of the abnormal condition and determining the extent to which the situation is under control.
      - (b) Ensuring that requisite safety-related systems and features are functioning properly, and implementing response actions that may be required to assist in regaining control of the situation.
      - (c) Analyzing the potential or actual radiological impact within the plume exposure Emergency Planning Zone (EPZ) to determine the appropriate actions necessary to protect the populace within this EPZ.
      - (d) Notifying appropriate local, state, and federal officials.
      - (e) Defining the accident recovery functions to be performed by the Emergency Response Organization including providing assistance to the DAEC.
      - (f) Assessing the existing corporate resources available and evaluating how best to apply these resources to the tasks previously defined.
      - (g) Evaluation of the Emergency Response Organization and assignment of responsibilities based on this evaluation.
  - (b) Linn and Benton Counties
    - (i) The Linn and Benton County Emergency Operations Centers will coordinate their respective County's response, and will accept response requests for the DAEC.
  - (c) Mercy Medical Center, University of Iowa Hospitals and Clinics, and Ambulance Services
    - (i) Duane Arnold has made arrangements with Mercy Medical Center in Cedar Rapids, Center Point, Hiawatha, and Area Ambulance for ambulance service for the DAEC. Linn County Sheriff's Rescue will also provide medical assistance for the DAEC as needed. Both radiological and non-radiological injuries will normally be treated by medical personnel at Mercy Medical Center under the overall supervision of the DAEC Medical Consultant. As a backup, University of Iowa Hospitals and Clinics are available.

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- (d) Palo Fire Department
  - (i) The Palo Fire Department provides first aid and backup fire-fighting support to the DAEC. Support efforts involving radiological incidents are directed and controlled by the Emergency Coordinator.
  
- (e) Iowa Homeland Security and Emergency Management Division, Iowa Department of Public Defense (HS-EMD)
  - (i) The HS-EMD provides assistance as outlined in the State of Iowa Radiological Emergency Response Plan. In summary, support includes the following:
    - (a) Alerting State agencies.
    - (b) Coordinating state radiological monitoring of areas, personnel, and equipment in support of local county authorities.
    - (c) Evaluating offsite radiological conditions.
    - (d) Operating the State Emergency Operations Center.
    - (e) Informing federal organizations, adjacent counties, and adjacent states.
    - (f) Assisting local county authorities, through the State Highway Patrol, with establishing traffic and access control.
    - (g) Establishing exposure criteria.
    - (h) Preparing and coordinating state information releases to local and Federal agencies and to the news media.
    - (i) Coordinating state mutual aid.
  
- (f) U.S. Nuclear Regulatory Commission (NRC)
  - (i) The role of the NRC during a radiological emergency is to verify that emergency plans and procedures have been implemented, to assure that the public health and safety are protected, and to conduct investigative activities associated with the incident. The NRC will assist in coordinating federal response resources as specified in the NRC Incident Response Plan and will provide Duane Arnold, state, and local agencies advisory assistance associated with assessing and mitigating hazards to the public.

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- (g) U.S. Department of Energy (DOE)
  - (i) The DOE has prepared a Federal Radiological Monitoring and Assessment Plan and an Interagency Radiological Assistance Plan. Under the provisions of these plans, the DOE will, upon request from the state, dispatch radiological teams to assist local and state agencies in monitoring and provide technical guidance. For further details see Section C.
- (h) Federal Emergency Management Agency (FEMA)
  - (i) The Federal Emergency Management Agency will provide federal emergency response as outlined in the National Response Plan and logistical support to the state and local governments involved in an emergency.
- (i) Contractors and Consultants
  - (i) The Nuclear Steam Supply System (NSSS) at the DAEC was supplied by the General Electric Company, Nuclear Energy Systems Division, San Jose, California. General Electric has established 24-hour dedicated communications coverage which is monitored continuously by the Security Operations Center at General Electric Nuclear Energy, San Jose, California. This service will be used by the utility to request emergency assistance in the event of an emergency involving the NSSS. Actions will be taken in accordance with the latest Services Information Letter regarding the BWR Emergency Support Program. Contractual arrangements for these services are described in the GE Letter of Agreement.
  - (ii) The Bechtel Power Corporation, Ann Arbor, Michigan, was the Architect-Engineer (AE) for the DAEC and may be requested to provide assistance. The Bechtel Emergency Response Manager will be the point of contact for the activation of Bechtel's Emergency Response Services (ERS). Upon notification from Duane Arnold of any emergency, the emergency response manager will activate Bechtel's ERS and contact the appropriate Bechtel management. Bechtel personnel will have the capability, under normal circumstances, of arriving at the DAEC within 24 hours after receipt of emergency notification. Bechtel can support many types of engineering activities. Bechtel's non-engineering departments include construction, cost and scheduling, quality assurance, procurement, and materials and quality services. Contractual arrangements for these services are described in the Bechtel Letter of Agreement.
  - (iii) Other contractors and consultants will be used as their expertise, manpower, and facilities are required. Agreements and contracts are currently in place with each of these contractors which retain their services and define the commercial conditions of those services on a routine basis. In case of an emergency condition at DAEC, these private contractors could be contacted to augment the services they are currently providing. The Emergency Coordinator or Emergency Response and Recovery Director will coordinate the specific assistance requirements.

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- (j) Institute of Nuclear Power Operations
  - (i) INPO has prepared an Emergency Resources Manual (ERM) from information provided by nuclear utilities, the major AE/NSSS organizations, and responding suppliers. In general, it contains the information necessary to locate and request staff, equipment and technical support in the event of a nuclear emergency. In addition, members of INPOs staff are available to assist in obtaining these resources.

## **2.4 ORGANIZATIONAL RESPONSIBILITY**

- (1) Specific individuals within the Emergency Response Organization in charge of emergency response are as follows:
  - (a) Emergency Response and Recovery Director
  - (b) Emergency Coordinator

## **2.5 DIRECTION AND COORDINATION**

- (1) The effectiveness of directing and coordinating the company's emergency response organization is influenced by the activation times, the organization and the severity of the emergency condition. The response time terminology listed below and the emergency conditions described in Section D should be utilized as mobilization and functional control criteria.
  - (a) Short-Term Actions - Actions that can be taken within 1 hour of initial notification of an emergency condition.
  - (b) Near-Term Actions - Actions that can be taken within 1 to 16 hours of initial notification of an emergency condition.
  - (c) Long-Term Actions - All actions taken 16 hours or more after initial notification of the emergency condition.
- (2) Activation of Emergency Response Facilities occurs when the minimum staff for each facility, as noted in Figure B-1, has arrived, been briefed on the event, and is ready to perform command and control functions. Although the facility may be ready, turnover may be postponed in the interest of completing critical tasks. As an immediate action, the on-shift plant operations staff will initiate the callout process for augmented ERO members to ensure timely staffing of the onsite and offsite facilities. Augmenting the on-shift staff with additional off-shift personnel can occur within 60 minutes of initial declaration of the emergency condition.

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- (3) The Emergency Response and Recovery Director (ER&RD), Radiological and EOF Manager, Radiological Assessment Coordinator (or their alternates), and the Joint Information Center (JIC) Manager will be notified within the time frame specified in the Emergency Plan Implementing Procedures (EPIPs). Activation of the TSC and OSC will occur at an ALERT or higher classification. The TSC and OSC have an activation time of 60 minutes. The EOF has an activation time of 60 minutes from a Site Area Emergency or higher classification. Therefore, in the near-term, key Emergency Operations Facility staff members or their designees will be available to coordinate support activities from the Emergency Operations Facility on the 15th floor of the Alliant Tower in Cedar Rapids. During a SITE AREA EMERGENCY or GENERAL EMERGENCY condition, the EOF will be activated. When an ALERT condition is declared, personnel assigned to the EOF and JIC will leave from the DAEC and report to their respective facility, whether or not the EOF and JIC have yet been activated. Shift assignments and changes will occur within 16 hours of the initial mobilization of the Emergency Response Organization.

## 2.6 EMERGENCY RESPONSE FUNCTIONS

- (1) For DAEC, the functions and the person responsible for each function are addressed below and summarized in Table A-1. The functions are addressed in more detail throughout the remainder of the plan, primarily in Section B.
- (a) Command and Control
    - (i) The ER&RD exercises overall control of DAEC emergency response activities. He ensures the overall direction of site and corporate activities is properly focused and the necessary resources are available for proper response.
  - (b) Warning/Notification Communications
    - (i) The Operations Shift Manager/~~Supervisor~~, acting as the Emergency Coordinator, is responsible for initially notifying ERO personnel and offsite agencies of an emergency situation and for providing support information to aid in initial response.
  - (c) Public Information
    - (i) The JIC Manager is responsible for ensuring that communications links are established with the news media and for coordinating information releases to the media related to plant conditions and offsite radiological consequences.

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(d) Accident Assessment

- (i) The Operations Shift Manager/~~Supervisor~~, acting as the Emergency Coordinator, is initially responsible for assessing the magnitude and potential consequences of an emergency condition and providing this information when notifying Duane Arnold, local, state, and federal officials and agencies. Subsequently, the Site Radiation Protection Coordinator assumes responsibility for dispatching appropriate personnel to monitor the environs. Upon activation of the EOF, the Radiological Assessment Coordinator assumes responsibility for directing field monitoring teams, assessing the results of monitoring activities, apprising appropriate personnel of the results of these efforts, and assisting in the development of appropriate recommendations for protective actions to be taken by the public.

(e) Public Health and Protective Response

- (i) The Operations Shift Manager/~~Supervisor~~, acting as the Emergency Coordinator, is initially responsible for contact and coordination with public officials regarding protection of the general public. After activation of the Technical Support Center (TSC), the Emergency Coordinator, assisted by the Site Radiation Protection Coordinator, assumes the responsibility for contact with public officials.
- (ii) When the EOF is activated, the Radiological and EOF Manager is responsible for contact and coordination with public officials and, with the support of the Radiological Assessment Coordinator, provides recommendations associated with protective actions and alternatives that can be taken to protect the general public. He is responsible for keeping these officials apprised of changes in the condition of the plant and of releases, or planned releases, to the atmosphere.

(f) Fire, Rescue/Emergency, and Medical Services

- (i) The Operations Shift Manager/~~Supervisor~~, acting as the Emergency Coordinator, is responsible for requesting and coordinating these services, if needed, during the initial stages of an accident.

(g) Onsite Radiological Exposure Control

- (i) The Emergency Coordinator, assisted by the Site Radiation Protection Coordinator is responsible for controlling and minimizing radiological exposures to emergency response personnel and authorizing the performance of activities that may result in exposures in excess of normal limits. The Site Radiation Protection Coordinator is responsible for related onsite radiological monitoring activities, decontamination, and record keeping.

(h) Access Control/Security/Accountability

- (i) The Security and Support Supervisor, assisted initially by the Operations Shift Manager/~~Supervisor~~, will assure personnel accountability is initiated and maintained, and will limit site and facility access to authorized personnel only.

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## 2.7 AUTHORITY AND AGREEMENTS

- (1) The following identifies the legal state and federal instruments which establish authority for local and state agency support for an emergency.
  - (a) Federal Civil Defense Act of 1950 as amended (Public Law 920, 81st Congress)
  - (b) Federal Civil Defense Guide, January 1965, as amended
  - (c) Civil Preparedness Guide
  - (d) Disaster Relief Act of 1974 as amended (Public Law 92-228)
  - (e) 1993 Code of Iowa, Subtitle 12, Emergency Control and Chapter 29C, Emergency Management
  - (f) Price Anderson/Stafford Act
  
- (2) Written agreements have been reached and are maintained with those support organizations that have an emergency response role within the Emergency Planning Zone. These agreements establish an understanding of assigned responsibilities and ensure proper coordination of activities in the event of an emergency. Included as Appendix 2 is a list of the support organizations with which agreements have been reached. These Letters of Agreement are kept on file with the Emergency Planning Department located onsite at the DAEC.

## 2.8 EXTENDED OPERATION

- (1) The Emergency Response Organization is capable of continuous operation from the time that emergency response actions are initiated until the recovery organization, discussed in Section M, is activated. The Emergency Response and Recovery Director is responsible for ensuring continuity of resources (technical, administrative, and material). The Emergency Coordinator has been delegated authority to obtain necessary assistance from outside agencies, such as suppliers, contractors, and consultants as required to establish stable plant conditions.

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**TABLE A-1**  
**EMERGENCY RESPONSE FUNCTION AND RESPONSIBILITIES**

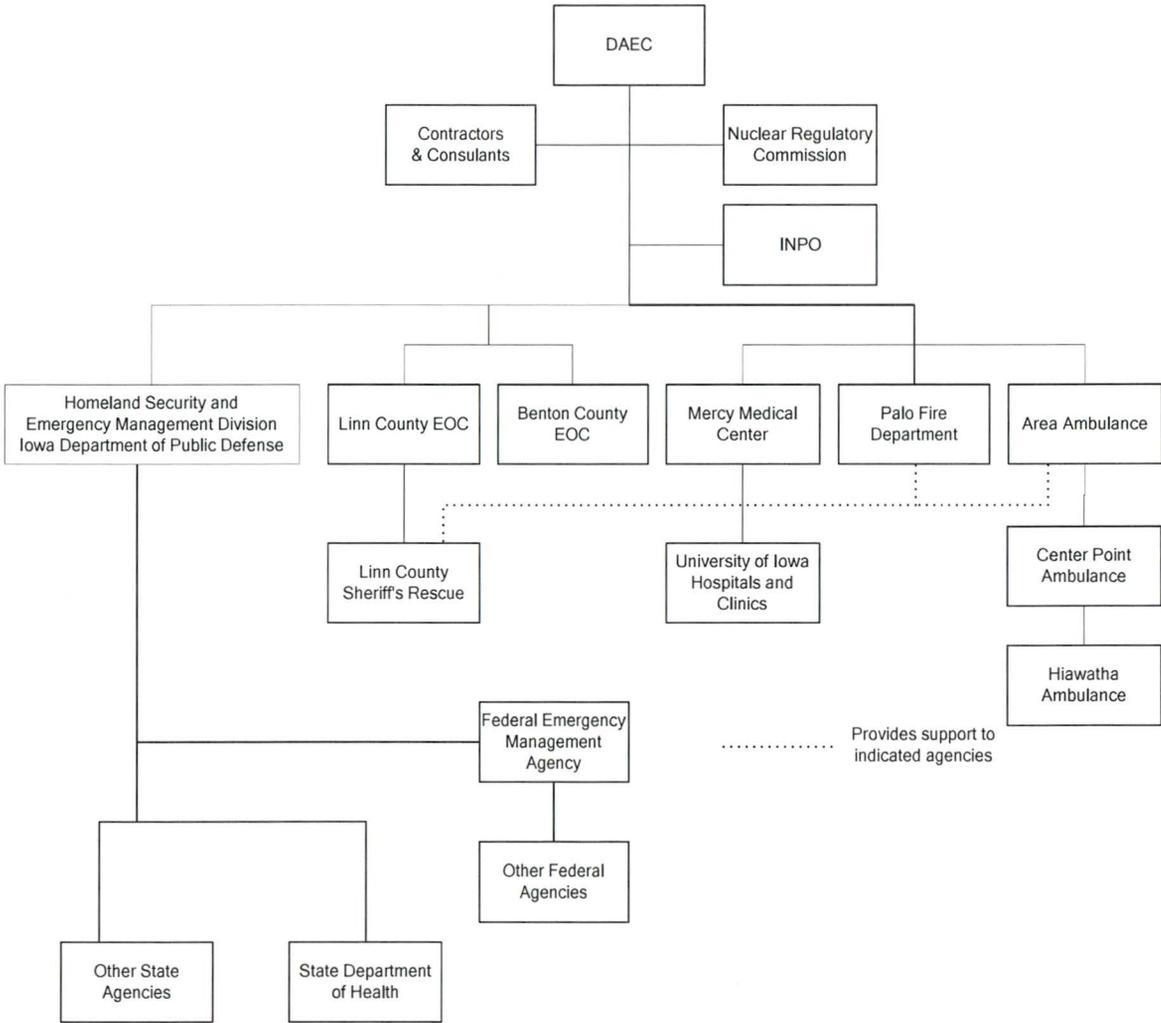
Responsible Individual

<b>EMERGENCY RESPONSE FUNCTION</b>	Emergency Response and Recovery Director	Radiological and EOF Manager	Radiological Assessment Coordinator	JIC Manager	Emergency Coordinator	Site Radiation Protection Coordinator	Operations Shift Manager/ <b>Supervisor</b>	Security and Support Supervisor
Command and Control	L				P		I	
Alerting and Notification					L		I	
Communications	L	P			P		I	
Public Information				L				
Onsite Accident Assessment					L	P	I	
Offsite Accident Assessment			L			P	I	
Public Health and Protective Response		L	P				I	
Fire/Rescue, Emergency, Medical					L		I	
Onsite Radiological Exposure Control					L	P	I	
Access Control, Security, Accountability							I	L

I = Initial Responsibility  
L = Lead Responsibility  
P = Primary Support

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**FIGURE A-1**  
**INTERRELATIONSHIPS BETWEEN EMERGENCY ORGANIZATIONS**



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## **1.0 PURPOSE**

- (1) This section describes the structure of the Emergency Response Organization and the specific responsibilities and authorities of key response personnel. Support services available with the DUANE ARNOLD (DAEC) to augment the Emergency Response Organization are identified as well as those services that may be provided by the DAEC, contractors, and local organizations.

## **2.0 REQUIREMENTS**

### **2.1 RESPONSE POSITIONS**

- (1) The Emergency Response Organization is as illustrated in Figure B-1, and in the text of Section 'B' and Section 'H' of the DAEC Emergency Plan. Personnel qualified to fulfill the emergency response positions are identified in the Emergency Telephone Book, Learning Management System (LMS), and in the DAEC Emergency Preparedness Department's Training Records, which are considered to be the most up-to-date record available. The Emergency Response Organization (ERO) structure can be modified as required by the Emergency Coordinator or Emergency Response & Recovery Director (ER&RD).

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## 2.2 ONSITE RESPONSE ASSIGNMENTS

Immediate response organizational assignments, lines of succession, and responsibilities are as described below, for the Onsite organization.

### 2.2.1 EMERGENCY COORDINATOR

(1) Assignment

- (a) The Emergency Coordinator functions onsite, coordinates the total site response effort, and normally operates from the Technical Support Center (TSC). The Emergency Coordinator reports to the ER&RD and has full authority and responsibility to initiate emergency actions and to recommend appropriate offsite protective measures to local and state authorities during the initial stages of the event as discussed in Section A.

(2) Lines of Succession

- (a) The Operations Shift Manager/~~Control Room Supervisor~~ (OSM/~~CRS~~) functions as the Emergency Coordinator until relieved. A qualified person will assume the responsibility of the Emergency Coordinator and receives turnover from the OSM/~~CRS~~. If necessary, the ER&RD will appoint the position of Emergency Coordinator and will inform the Operations Shift Manager/~~Control Room Supervisor~~ of the appointment.

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(3) Responsibilities

- (a) The Emergency Coordinator exercises full responsibility and authority for all activities at the site. This position is a 60-minute ERO response reporting position. He/she is assigned the following functional responsibilities:
- (i) Ensure the activation of the onsite Emergency Response Organization as appropriate for the classification and circumstances of the emergency condition.
  - (ii) Coordinate efforts to return the plant to and maintain it in a safe, stable condition.
  - (iii) Coordinate accident assessment and analyses efforts to determine the full scope and impact of the emergency.
  - (iv) Ensure appropriate initial notification of DAEC, local, state, and federal officials and agencies. This function will be assumed by the Emergency Operations Facility (EOF) when activated.
  - (v) Provide initial Protective Action Recommendations, as appropriate, to local and state authorities who are responsible for offsite protective measures. This function will be assumed by the Emergency Operations Facility upon activation of that facility.
  - (vi) Apprise DAEC, local, state, and federal officials and agencies of updated information pertaining to the emergency condition.
  - (vii) Classify/reclassify the event as necessary.
  - (viii) Approve extensions on exposure limits for emergency workers, if necessary.
  - (ix) Select alternate location for the Offsite Relocation & Assembly Area if radiological release and meteorological conditions warrant a change.
  - (x) Prepare the Emergency Response Organization for an orderly transfer of responsibilities to the recovery organization.
- (b) While the administrative aspects of most of these responsibilities may be delegated by the Emergency Coordinator, the responsibilities for items 2.2.1(3)(a)(v), 2.2.1(3)(a)(vii), and 2.2.1(3)(a)(viii) may not be delegated except as indicated herein. Upon operation of the EOF, the ER&RD assumes responsibility for these non-delegable duties.

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## 2.2.2 OPERATIONS SHIFT MANAGER ~~AND CONTROL ROOM SUPERVISOR~~ (OSM/~~CRS~~)

### (1) Assignment

- (a) The OSM/~~CRS~~, located in the Control Room, shall provide direction as required to return the plant to or assure that it is maintained in a safe, stable configuration.

### (2) Lines of Succession

- (a) Generally, the Operations Shift Manager, the senior individual, assumes the role of Emergency Coordinator. ~~However, the Control Room Supervisor will assume the role of Emergency Coordinator if the Operations Shift Manager is incapacitated. In the event that both the Operations Shift Manager and Control Room Supervisor are incapacitated, their responsibilities will immediately be assumed by a Licensed Senior Reactor Operator, if available, or by the Nuclear Station Operating Engineer. Should this situation occur during normal work hours, the Operations Manager or Supervisor, upon his arrival in the Control Room, will assume the responsibilities and authorities normally assigned to the Operations Shift Manager/Control Room Supervisor. If this situation should occur during other than normal work hours, the first licensed Senior Reactor Operator who reports to the site will assume the functional responsibilities assigned to the Operations Shift Manager or Control Room Supervisor. Subsequent relief of this individual will be as directed by the Emergency Coordinator.~~

### (3) Responsibilities

- (a) The Operations Shift Manager/~~Control Room Supervisor~~ evaluates the abnormal condition and implement emergency response actions as specified in the Emergency Plan Implementing Procedures (EPIPs) including:
- Classifying the event
  - Recommending Protective Actions, if appropriate
  - Notifying county, state, and federal officials and offsite support agencies as necessary
  - Notifying the Emergency Response Organization

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## ~~0.0.0 TSC OPERATIONS SUPERVISOR~~

### ~~(0) Assignment~~

~~(-) The TSC Operations Supervisor will proceed to the TSC after receiving a plant status briefing, as needed, from the OSM/OSS and will assist the TSC in all matters pertaining to the Control Room and Operations Department activities. In the event that the TSC Operations Supervisor is needed to stay in the Control Room for an extended period of time, the Emergency Coordinator shall assume these duties, assign collateral responsibilities to another ERO position, or appoint an alternate.~~

### ~~(0) Lines of Succession~~

~~(-) The OSM/CRS functions as the TSC Operations Supervisor until relieved by a qualified individual. If necessary, the Emergency Coordinator will appoint the TSC Operations Supervisor.~~

### ~~(0) Responsibilities~~

~~(-) This position is a 60-minute ERO response reporting time position.~~

~~(-) The TSC Operations Supervisor is responsible for the following activities:~~

- ~~• Assist the TSC in all matters pertaining to the Control Room and to Operations Department activities.~~
- ~~• Providing direction and assistance, as necessary, to the OSM/CRS to achieve and maintain stable plant conditions.~~
- ~~• Assisting the OSM/CRS in coordinating operational activities.~~
- ~~• Monitoring operational activities to assure that the plant is operated and maintained in as safe a condition as possible.~~
- ~~• Evaluating recommendations for corrective action provided by the technical staff and operating crew and recommending to the Emergency Coordinator a course of action to be taken to mitigate the situation.~~
- ~~• Recommending changes to the Emergency Classification based upon:
 
  - ~~(i) Plant status changes, with or without radiological releases in progress.~~
  - ~~(ii)(i) Actual or potential radiological release parameters.~~
  - ~~(iii)(i) The progress of those activities undertaken to mitigate the situation and their probability for success.~~~~

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### 2.2.3 SITE RADIATION PROTECTION COORDINATOR

#### (1) Assignment

- (a) The Site Radiation Protection Coordinator will operate from the TSC and initiate those activities related to radiological assessment of the environs surrounding the plant during the initial stages of the event. Offsite monitoring will be assumed by the Radiological Assessment Coordinator upon activation of the EOF.

#### (2) Lines of Succession

- (a) The Operations Shift Manager/~~Control Room Supervisor~~ functions as the Site Radiation Protection Coordinator until officially relieved by the Emergency Coordinator. A qualified Site Radiation Protection Coordinator informs the Emergency Coordinator that he/she is ready to assume that position's responsibilities. If necessary, the Emergency Coordinator will appoint the Site Radiation Protection Coordinator.

#### (3) Responsibilities

- (a) This position is a 60-minute ERO response reporting time position.
- (b) The Site Radiation Protection Coordinator is responsible for the following activities:
- Ensuring that DAEC personnel are dispatched to monitor the environs in and around the plant for radiological consequences associated with the event.
  - Conducting an initial evaluation and assessment of the results of radiological monitoring activities. Upon activation of the EOF, evaluation and assessment of all offsite monitoring activities will be assumed by the Radiological Assessment Coordinator.
  - Assessing the onsite radiological consequences and directing protective measures, including the need for partial or complete evacuation of the plant.
  - During the initial stages of the event, apprising local and state authorities, through the Emergency Coordinator, of the results of radiological monitoring activities and providing protective action recommendations based upon the projected radiological consequences to the population at risk. Upon activation of the EOF, this function will be assumed by the Radiological Assessment Coordinator.

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## 2.2.4 SECURITY AND SUPPORT SUPERVISOR

### (1) Assignment

- (a) The Security and Support Supervisor will exercise supervision and direction of the security staff and direction over the personnel assigned to the TSC support staff.

### (2) Lines of Succession

- (a) If necessary, the Emergency Coordinator will appoint the Security and Support Supervisor.

### (3) Responsibilities

- (a) This position is a 60-minute ERO response reporting time position.
- (b) Upon activation of the TSC, the Security and Support Supervisor is responsible for:
  - Assuring that an accountability check for all personnel within the protected area is conducted in a timely fashion and that requisite security posts are filled.
  - Ensuring that the Emergency Response Organization notification process as described in the Emergency Plan Implementing Procedures has been initiated and is successfully completed.
  - Assuring the TSC closed ventilation system is operational and activated.
  - Limiting access into the facility to only those personnel who are members of the Emergency Response Organization, or otherwise are authorized.
  - Establishing measures that will enable continuous accountability for all personnel within the protected area once the initial accountability check has been completed.
  - Ensuring that no unauthorized personnel gain access to the site.
  - Assigning personnel for first aid duties, as required.
  - Providing overall management and direction to the support staff assembled in the TSC.

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## 2.2.5 TECHNICAL AND ENGINEERING SUPERVISOR

### (1) Assignment

- (a) The Technical and Engineering Supervisor will exercise overall management and supervision of engineering, analysis and corrective action efforts undertaken by engineering and maintenance personnel at the DAEC from the TSC. In addition, he/she will coordinate with the Emergency Response Organization for engineering support efforts undertaken at the request of the Emergency Coordinator ~~or TSC Operations Supervisor~~.

### (2) Lines of Succession

- (a) If necessary, the Emergency Coordinator will appoint the Technical and Engineering Supervisor.

### (3) Responsibilities

- (a) This position is a 60-minute ERO response reporting time position.
- (b) Upon activation of the site Emergency Response Organization and the Technical Support Center, the Technical and Engineering Supervisor is responsible for:
- Verifying that the TSC is fully activated and staffed as described in the Emergency Plan Implementing Procedures.
  - Evaluating plant status and providing support to the operations staff as requested.
  - Assisting the Emergency Coordinator ~~and the TSC Operations Supervisor~~ in establishing the priority for repair activities to be undertaken.
  - Providing direction to the technical staff comprised of support personnel such as the Fire Marshal, Safety Supervisor, and consultant/contractor representatives to analyze plant conditions and define courses of action to mitigate the emergency situation.
  - Providing direction to the engineering staff in TSC to aid in analysis of plant conditions and define courses of action to mitigate the emergency situation.
  - Coordinating corporate engineering activities with efforts being taken at the DAEC to mitigate the event and establish stable plant conditions.
  - Providing support to the Operations Support Center (OSC) Supervisor as necessary for coordinating all repair/corrective action efforts conducted at the DAEC.

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## ~~REACTOR ENGINEER~~

### ~~Assignment~~

~~The Reactor Engineer will provide support to the operations crew located in the Control Room, and to the Emergency Coordinator from the TSC. He/she will provide recommendations for returning the reactor core to a safe and stable condition.~~

### ~~Lines of Succession~~

~~If necessary, the Emergency Coordinator will appoint the Reactor Engineer.~~

### ~~Responsibilities~~

~~This position is a 60-minute ERO response reporting position.~~

~~Upon activation of the Emergency Plan for conditions classified as an ALERT or greater, the Reactor Engineer is responsible for:~~

- ~~• Supporting the operating crew in bringing the reactor core to desired condition and maintaining it there.~~
- ~~• Determining and reporting the amount of failed fuel to the TSC Operations Supervisor~~
- ~~• Obtaining vendor feedback on the amount of failed fuel.~~
- ~~• Recommending fuels related priorities in recovery/re-entry operations.~~

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## 2.2.6 ADMINISTRATIVE SUPERVISOR

### (1) Assignment

- (a) The Administrative Supervisor will provide administrative and logistics support, as required, in the event that activation of the site Emergency Response Organization is required from the Technical Support Center.

### (2) Lines of Succession

- (a) If necessary, the Security and Support Supervisor will appoint someone to fill this position.

### (3) Responsibilities

- (a) This position is a 60-minute ERO response reporting time position.
- (b) Services to be provided under the direction of the Administrative Supervisor include, but are not limited to:
  - Clerical, typing, and copying services.
  - Document retrieval.
  - Food services, clothing and overnight accommodations.
  - Coordination of transportation services and any facilities or office space needs.
  - Determining existing and potential administrative support needs and providing recommendations to the Security & Support Supervisor, as required.
  - **Providing updates of status and relevant log information.**

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## 2.2.7 TSC OPS LIAISON

### (1) Assignment

- (a) The TSC Operations Liaison will provide operations support, as required, in the event that activation of the site Emergency Response Organization is required from the Technical Support Center.

### (2) Lines of Succession

- (a) If necessary, the Emergency Coordinator will appoint the TSC Operations Liaison.

### (3) Responsibilities

- (a) This is a 60-minute ERO response reporting time position.
- (b) The TSC Ops Liaison is responsible for the following:
- Advising the EC ~~and TSC Ops Supervisor~~ on EAL/PAR declarations
  - Generating paperwork required for EAL/PAR declarations
  - Ensuring the State, Counties, and NRC receive notification regarding EALs and PARs
  - Providing an operational insight and tracking plant status
  - Advising the EC ~~and TSC Ops Supervisor~~ on matters that pertain to the plant as part of the Severe Accident Management Team.
  - Assist the TSC in all matters pertaining to the Control Room and to Operations Department activities.
  - Providing direction and assistance, as necessary, to the OSM/CRS to achieve and maintain stable plant conditions.
  - Assisting the OSM/CRS in coordinating operational activities.
  - Monitoring operational activities to assure that the plant is operated and maintained in as safe a condition as possible.
  - Evaluating recommendations for corrective action provided by the technical staff and operating crew and recommending to the Emergency Coordinator a course of action to be taken to mitigate the situation.

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- Recommending changes to the Emergency Classification based upon:
  - (i) Plant status changes, with or without radiological releases in progress.
  - (ii) Actual or potential radiological release parameters.
  - (iii) The progress of those activities undertaken to mitigate the situation and their probability for success.
- Ensure Control Room is kept informed of TSC and OSC activities and priorities.
- Assist EC and Control Room on plant condition status and trends.
- Planning work packages for repair activities with assistance of engineering personnel in the TSC.

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## 2.2.8 OPERATIONAL SUPPORT CENTER (OSC) SUPERVISOR

### (1) Assignment

- (a) The OSC Supervisor will exercise supervision and direction over the personnel who report to the OSC. He/she will report to the Emergency Coordinator in the TSC and will coordinate repair/corrective action efforts conducted at DAEC.

### (2) Lines of Succession

- (a) If necessary, the Emergency Coordinator will appoint the OSC Supervisor.

### (3) Responsibilities

- (a) This position is a 60-minute ERO response reporting time position.
- (b) Upon activation of the Emergency Response Organization the OSC Supervisor is responsible for:
- Supervising the implementation of the tasks and staffing delineated by the Emergency Assignment Staffing Board.
  - Providing general supervision and direction to personnel who report to the OSC.
  - Coordinating evacuation from the site of all unnecessary personnel during events classified as a SITE AREA or GENERAL EMERGENCY, once such an evacuation has been authorized by the Emergency Coordinator.
  - Coordinating all repair/corrective action efforts conducted at the DAEC to achieve stable plant conditions and to terminate any uncontrolled or excessive radiological release.
  - Ensuring that personnel dispatched from the OSC are properly briefed and equipped for their assignment in regards to technical content, as well as ALARA, including existing and potential radiological hazards.

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## 2.2.9 HEALTH PHYSICS SUPERVISOR

### (1) Assignment

- (a) The Health Physics Supervisor will provide overall direction and supervision in regards to ALARA and radiological practices to personnel in the OSC. In addition, he/she will provide direction to personnel for habitability of assembly areas.

### (2) Lines of Succession

- (a) If necessary, the OSC Supervisor will appoint the Health Physics Supervisor.

### (3) Responsibilities

- (a) This position is a 60-minute ERO response reporting time position.
- (b) Upon activation of the Emergency Response Organization the Health Physics Supervisor is responsible for:
  - Ensuring that personnel dispatched from the OSC are properly outfitted with protective clothing and equipment, briefed regarding ALARA, and apprised of existing and potential radiological hazards.
  - Coordinating with the Site Radiation Protection Coordinator to obtain information regarding plant status, problems, response options, significant radiological releases in progress, offsite dose rates, plume location, and meteorological conditions as necessary.
  - Ensuring the determination of habitability of assembly areas and ERO facilities.
  - Coordinating the dispatch of monitoring teams and Offsite Relocation and Assembly Area (ORAA) personnel.
  - Ensuring the ORAA is briefed periodically in terms of plant and radiological conditions.
  - Supervising efforts to prepare injured/contaminated personnel for transport to offsite medical facilities.

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~~0.0.0 INSTRUMENTATION AND CONTROL/ELECTRICAL MAINTENANCE (IC/EM) SUPERVISOR, AND MECHANICAL MAINTENANCE SUPERVISOR~~

~~(0) Assignment~~

~~(-) The IC/EM Supervisor and Mechanical Maintenance Supervisor will aid in the coordination of repair/corrective actions conducted at the DAEC to achieve stable plant conditions from the Operations Support Center.~~

~~(0) Lines of Succession~~

~~(-) If necessary, the OSC Supervisor will appoint the IC/EM Supervisor and Mechanical Maintenance Supervisor~~

~~(0) Responsibilities~~

~~(-) These positions are 60-minute ERO response time reporting positions.~~

~~(-) Upon activation of the Emergency Response Organization, the IC/EM Supervisor and Mechanical Maintenance Supervisor are responsible for:~~

- ~~• Planning work packages for repair activities with assistance of engineering personnel in the TSC.~~
- ~~• Selecting personnel for repair teams appropriate to the work being done.~~
- ~~• Conducting briefing and debriefings to repair team personnel.~~

**2.2.122.2.10 MINIMUM STAFFING**

- (1) On-shift staffing and staff augmentation assignments are identified in Table B-1. The staffing plan is consistent with the guidance contained in NUREG-0654. On-shift staffing as noted in Table B-1 has been validated by an On-shift Staffing Analysis completed in accordance with the requirements of 10 CFR 50 Appendix E, IV.A.9. Details regarding the assignments and associated responsibilities are addressed in the EIPs.

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### **2.2.132.2.11 OTHER DAEC ORGANIZATIONAL ASSIGNMENTS**

In addition to the key response personnel described in the preceding sections, other DAEC personnel will assume roles as necessary in supporting the overall emergency response. Assignments and responsibilities of these support groups follow:

(1) Security

- (a) Upon activation of the plan, for events classified as an ALERT or greater, the DAEC Security Force is responsible for performing an accountability check for all personnel within the protected area and controlling access to the site property. If evacuation of the site is required, the Security Force will assist in the evacuation and conduct an accountability check of all personnel dispatched to the ORAA.

(2) Administrative

- (a) The DAEC Administrative Support Staff will provide general logistical support functions to aid response organization activities. This includes long range planning for providing personnel, material, facilities and office and clerical services. Additionally, the administrative staff will coordinate warehouse and procurement activities and obtain life support services such as food, clothing, and overnight accommodations.

(3) Technical/Engineering

- (a) The technical and maintenance support staffs will provide plant engineering, maintenance assistance and coordination of corrective actions taken to mitigate the emergency condition, or terminate a release. This includes analytical and engineering efforts of site and corporate engineers and supervision and technical direction of activities performed by engineering, maintenance, or construction crafts.

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(4) Quality Assurance

- (a) Quality Assurance can provide assistance to design, procurement, and construction activities that are required to establish cold shutdown conditions. Quality Assurance can define and track activities that are not conducted in accordance with normal established practices, and can ensure that post-accident evaluations are conducted to verify the acceptability of those activities for both short and long term service.

(5) Materials Management (Warehouse)

- (a) The Warehouse Supervisor will provide warehouse and procurement support in the event that procurement of specialized parts/equipment not currently stored on-site, or available locally, is required.
  - (i) The site staff has the ability to procure site stores, and locally available stores, (equipment, parts, etc.) without involving the Warehouse Supervisor.

(6) Contracts and Agreements

- (a) Assistance to the emergency response effort will be available from the Nuclear Steam Supply System supplier (General Electric), Architect-Engineer (Bechtel) and other consultants. Agreements and contracts are currently in place with each of these organizations which retain their services and define the commercial conditions of those services on a routine basis. In case of an emergency condition at DAEC, these private contractors could be contacted to augment the services they are currently providing. Agreements have been negotiated for emergency services as necessary. Section A of the DAEC Emergency Plan provides further details on the availability of contractors and consultants.

(7) Safety

- (a) The Safety Specialist can advise Corporate Management in the area of safety. When a personal injury accident occurs at DAEC, the Safety Specialist can provide investigative reports reflecting the events that led up to the accident. He/she can indicate whether safety rules and procedures were followed and recommend follow-up corrective/disciplinary actions. Additionally, the Safety Specialist is responsible for reporting all serious accidents to the Iowa Occupational Safety and Health Administration, a branch of the Iowa Bureau of Labor.

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## 2.3 OFFSITE (EOF & JIC) RESPONSE ASSIGNMENTS

2.3.1 The Emergency Operations Facility and Joint Information Center (JIC) provide the following principal functions in the overall response to an emergency at the DAEC once control is transferred from the Technical Support Center:

- (1) Establishes a single focal point for performing radiological dose assessment and Protective Action Recommendation decision-making, including coordination and interface with local, state, and federal support groups
- (2) Establishes a coordinated means to disseminate information related to the accident to public officials, the news media, and industry public relations forums.

2.3.2 Response positions are as follows:

- (1) Emergency Response and Recovery Director (ER&RD)
  - (a) Assignment
    - (i) The ER&RD is responsible for the overall direction and control of DAEC's integrated emergency response and recovery effort and providing the financial resources and contractual capabilities to ensure requisite actions can be taken to protect the health and safety of the public.
  - (b) Responsibilities
    - (i) This is a 60-minute ERO response time reporting position.
    - (ii) Ensuring that the Emergency Response Organization is staffed by qualified personnel and coordinating with these personnel to ensure that sufficient support for various functions is available, either from within Duane Arnold or from outside organizations (i.e., other utilities, Architect Engineers, Nuclear Steam Supply System suppliers, INPO, consultants, etc.).
    - (iii) Authorizing the procurement of equipment, materials, and resources, as necessary, to effectively respond, control, and recover from an accident condition at DAEC.
    - (iv) Implementing the Emergency Plan Implementing Procedures (EPIPs).
    - (v) Reviewing and concurring with Protective Action Recommendations prior to their issuance once the Emergency Operations Facility (EOF) is operational.

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(2) Radiological and EOF Manager

(a) Assignment

- (i) The Radiological and EOF Manager is responsible for coordinating and directing all offsite radiological monitoring and dose assessment programs and supervising activities within the EOF. He/she will be accountable to the ER&RD.

(b) Responsibilities

- (i) Establishing communications with the TSC as necessary. Obtaining information on the diagnosis and prognosis of the accident condition, the quantities of radioactive material releases, and the prevailing meteorological conditions.
- (ii) Coordinating the onsite and offsite radiological monitoring activities to provide anticipated release rates and projected dose rates.
- (iii) Assisting and interfacing with county, state, federal and support agencies to relate accident information necessary for the offsite authorities to implement their county and state emergency plans and procedures.
- (iv) Interpreting radiological data for updating the ER&RD, county, state, federal and support agencies in terms of projected radiological exposures and actual dose measurements. This includes providing estimates of total population exposure when necessary. Providing radiation protection for those assembled at the EOF.
- (v) Analyzing all information for significant trends while developing Protective Action Recommendations (PARs). Review the recommendations with the Emergency Response and Recovery Director and, when authorized, provide them to the state and county officials.
- (vi) Providing assistance to county, state, and federal officials for recovery activities.
- (vii) Advising the ER&RD to ensure compliance with legal and regulatory requirements.

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(3) Radiological Assessment Coordinator

(a) The Radiological Assessment Coordinator is responsible for the following:

- (i) Directing and coordinating offsite monitoring teams.
- (ii) Performing dose projection calculations.
- (iii) Providing Protective Action Recommendations, as required, to the Radiological and EOF Manager.
- (iv) Coordinating the necessary support to other Agencies and support groups in field assessment, data analysis, and environmental sample analysis.
- (v) Coordinating with the State of Iowa in tracking the plume offsite.

(4) Support Services Coordinator

(a) The Support Services Coordinator will assure that necessary resources and activities are provided by staff personnel. Specific areas are available to support the overall emergency response and recovery effort conducted both at the Alliant Tower and at the site. This includes security, communications, personnel, transportation, purchasing, industrial relations, and safety. He/she will also coordinate, as necessary, the application of resources and equipment available within Duane Arnold departments.

(i) Security

- The Support Services Coordinator in cooperation with the Alliant Corporate Security Manager is responsible for providing security for the Alliant Tower and controlling access to the EOF, JIC, and backup facility to the JIC as well as appropriate Duane Arnold working areas in the building. Staff assistance for building security will be provided by the security force under contract, and, to the extent possible, the Cedar Rapids Police Department and the Linn County Sheriff's office. Further details and instructions for establishing and maintaining security are provided in the EPIPs.

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(ii) Communications

- The Local Telephone Companies can provide engineering support for commercial telephone installations that are permanent or temporary. He/she can respond to identified communication needs and problems and coordinate necessary engineering and maintenance support for restoration or rearrangement of Duane Arnold communications systems.

(iii) Corporate Services

- The Corporate Services Department can provide required services and equipment such as record and document retrieval and reproduction, office supplies, office furniture, photography, facility and area maps, audio visual aids, graphics, printing, distribution services, and general housekeeping services.

(iv) Personnel

- Administrative personnel can be contacted to provide personnel to augment the administrative and clerical support functions associated with initial activation and continued operation of the EOF and JIC.

(v) Logistics and Transportation

- Transportation personnel can respond to identified transportation needs and emergency air and land transportation necessary for materials and personnel. He/she can arrange for rental cars and hotel accommodations for those personnel temporarily assigned to the Cedar Rapids area in support of the response and recovery effort. They can also provide for repairing and maintaining a transportation fleet and implementing contracts with commercial carriers to obtain priority transportation.

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(vi) Purchasing

- Purchasing and Materials personnel can respond to identified needs related to procurement of materials and services and coordinate onsite and offsite procurement activities to assure rapid delivery of materials. They can augment Duane Arnold resources by activating contracts with outside agencies and requesting, through use of prepared lists, emergency equipment available in Cedar Rapids.

(vii) Industrial Relations

- The Manager, Industrial Relations can assess and respond to contractual problems that may arise during the course of the event and apprise bargaining unit officials and trade counsels of existing or projected labor problems. He/she can also assist in the response to manpower needs through the use of established manning lists, a computerized skill inventory of DAEC employees, and the activation of established contracts/agreements with outside organizations.

(viii) Supplemental Resources

- The Operations and Production Departments of Duane Arnold can augment the DAEC staff during an emergency. Personnel and equipment are available to provide maintenance and construction services at the DAEC. Materials, equipment, and machine shop services are also available.

(5) EOF Ops Liaison

(a) The EOF Ops Liaison is responsible for the following:

- (i) Advising the ER&RD on Emergency Action Levels
- (ii) Providing an operational insight and tracking plant status
- (iii) Assisting in the recovery phase of the emergency
- (iv) Advising the ER&RD on matters that pertain to the plant

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(6) Joint Information Center (JIC) Manager

- (a) The JIC Manager is responsible for ensuring that accurate and timely information is provided to the public and the news media; coordinating press statements and news media briefings with local, state and federal public relations officials; and coordinating information with the Corporate Communications Department. His/her specific responsibilities include:
  - (b) Initiating notification of the Duane Arnold Emergency Information Organization and determining the extent to which the Joint Information Center (JIC) will be activated.
  - (c) Directing activities at news conferences.
  - (d) Coordinating the release of all information prepared by the JIC and ensuring that it receives concurrence from the DAEC Spokesperson or his/her designee as being technically accurate prior to its release.
  - (e) Providing overall direction and coordination of all emergency response activities conducted by the DAEC personnel in the JIC.
  - (f) Providing DAEC departments and employees with information consistent with that released to the media.

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## 2.4 LONG-TERM ORGANIZATION

- (1) Activation of the onsite Emergency Response Organization will, directly and indirectly, result in a response by essentially all personnel normally associated with the DAEC, particularly by management and key support personnel. Therefore, within several hours after the initiating event, decisions will be made to provide and prepare for a long term augmented emergency organization. The Emergency Response and Recovery Director will determine when the Recovery Organization is to be implemented. Prior to implementation of the Recovery Organization, the situation may require that the onsite Emergency Response Organization remain in place for a protracted period of time. As conditions allow, shift schedules will be developed by the ~~supervisors in charge of the Control Room and several support centers~~ various facilities. Prior to implementation, these schedules shall be reviewed and concurred with by the ~~Emergency Coordinator~~ facility leads. The Emergency Response Organization is set up on a team concept for 24-hour coverage.
  
- (2) Duane Arnold maintains the resources and capabilities to support response and recovery activities in the event of an emergency or accident condition at the DAEC. These include, but are not limited to, the following:
  - (a) Management direction and control
  - (b) Corporate and government affairs
  - (c) Public information and public relations
  - (d) Communications systems
  - (e) Security and administration
  - (f) Medical and first aid
  - (g) Transportation and accommodations
  - (h) Commissary and catering
  - (i) Purchasing and stores
  - (j) Construction, maintenance, and mobile equipment and materials

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- (k) Appropriate staff and work force augmentation
- (l) Engineering activities
  - (i) Nuclear fuel, ~~core physics, and thermal hydraulics~~
  - (ii) Design and construction
  - (iii) Electrical, instrumentation, mechanical
  - (iv) Chemistry and metallurgy
- (m) Planning and scheduling
- (n) Radiological analysis and protection
- (o) Accident analysis
- (p) Meteorological monitoring and analysis
- (q) Health physics and decontamination
- (r) Fire Protection
- (s) Procedure development
- (t) Operations and maintenance
- (u) Quality assurance and control
- (v) Contracts and agreements
- (w) Company records and files
- (x) Safety

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## 2.5 INTERFACES

2.5.1 Figures B-2 and B-3 illustrate the immediate and long-term response interfaces, respectively, between the Emergency Response Organization and organizations of affected local, state and federal offices and agencies. The TSC, OSC, EOF, and JIC are described and discussed in Section H.

(1) Public Information and Governmental Relations

(a) During an emergency situation, the Joint Information Center (JIC), located in the Alliant Tower, can provide timely and accurate information to the news media and to public officials. The JIC working area is located on the fifteenth floor of the Tower and contains a conference room, and is equipped with computers, printers, copiers and a full complement of communications capabilities. The press briefing room is located on the sixth floor and can accommodate media personnel for registration, inquiries, mass briefings, and press conferences. If the Cedar Rapids/Marion metropolitan area is evacuated, JIC spokespersons and appropriate support staff can be relocated to facilities on the main campus of Kirkwood Community College to continue media briefings and news conferences.

(b) Press Briefings and Public Relations

(i) The Joint Information Center will function as the principal focal point for distribution of information to the public regarding the emergency condition at the DAEC. Press briefings will be coordinated by the JIC Manager, who will ensure that appropriate emergency response and corporate individuals are available to provide technical information and respond to inquiries from the assembled media personnel. Information related to the plant as well as generic information related to the nuclear industry will be available to the media. Further details and instructions related to press briefings and public relations are provided in the EIPs.

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(c) Apprising Public Officials and Agencies

- (i) The facilities in the JIC will be used, as appropriate, following the issuance of Protective Action Recommendations (PARs), for follow-up discussions and briefings of government officials and industry spokespersons on the status of the event, actions being taken, and evaluations assessing the impact upon the public.

(2) Corporate Assistance

(a) Legal Counsel

- (i) Legal Counsel can provide the ER&RD with advice to prevent DAEC from taking actions that could increase corporate liability or jeopardize indemnification agreements when handling claims and litigation.

(b) Insurance and Claims

- (i) Insurance and Risk personnel can advise the ER&RD in the area of insurance and claims, and provide them with regular status reports on the injured or contaminated individuals treated at nearby medical facilities. They interface with American Nuclear Insurers and can apprise them of the details, the sequence of events, the impact of the emergency, and the actions being taken to mitigate its consequences. They also interface with Nuclear Electric Insurance Limited and Nuclear Mutual Limited (NEIL/NML), a utility-owned captive insurance group, which covers the loss of generation and coordinates claims filed on behalf of DAEC.
- (ii) Insurance and Risk personnel will coordinate with nearby medical facilities and backup medical facilities at the University of Iowa Hospitals and Clinics, as required, in the treatment of radiological and non-radiological injuries. Insurance and Risk personnel can also complete all insurance forms and document all events affecting insurance and claims during the emergency.

**2.6 LOCAL SUPPORT SERVICES**

- (1) Agreements have been reached with local agencies and private support facilities with regard to the type of support that will be furnished to the DAEC in the event of an

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emergency. These agreements in the form of letters of agreement (refer to Appendix 2 for list of letters) and agreements of responsibility as described in the Linn and Benton County Radiological Emergency Response Plans have been developed to ensure that there is a clear understanding of assigned responsibilities and that there will be proper coordination of activities in the event of an emergency. The Letters of Agreement will be updated as necessary and confirmed as acceptable at least every two years.

Linn County, Benton County, and the State of Iowa are notified of classified events using the communication methods described in Section E “Notification Methods and Procedures”. Through this formal process, and other informal communication processes, resources can be requested from the County and State Emergency Response Organizations. Existing agreements are in place to supply the site with resources requested. Examples are:

- (a) Emergency Medical Services (EMS) – Emergency medical services and ambulances as requested by DAEC and implemented using the Incident Command System (ICS).
- (b) Fire and Rescue – Fire response, fire apparatus, and volunteer firefighters as requested by DAEC and implemented using the ICS.

Additionally, the Counties have mutual aid agreements to obtain additional resources from surrounding counties. Processes are also in place for Counties to request resources from the State.

The site Security Plan contains information on how local law enforcement is contacted for a hostile action.

### **3.0 ATTACHMENTS**

- (1) Table B-1, “On-Shift Staffing & Staff Augmentation Assignments”
- (2) Figure B-1, “Onsite Emergency Response Organization”
- (3) Figure B-2, “Immediate Response Interface”
- (4) Figure B-3, “Long-Term Response Interface”

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Table B-1  
On-Shift Staffing & Staff Augmentation Assignments

Major Functional Areas	Major Tasks	Position Title or Expertise (All positions are 24-hour staffing)	On-Shift * = see Comments	Capability for additions		Response Location	Comments		
				60 min	90 min				
Plant Operations and assessment or operational aspects	Respond to condition and mitigate operational event consequences	Operations Shift Manager ( <del>SRO</del> Certified Fuel Handler)	1*			CR	Provides early direction and control until relieved by the Emergency Coordinator <del>One NCO is designated as the Fire Brigade Leader</del> <del>Third Reactor Operator is assigned as Fire Brigade Leader</del>		
		<del>Control Room Supervisor (SRO) Non-Certified Operator (NCO)</del>	<del>1</del> 2			<del>GRCR</del>			
		<del>Control Room Operators</del>	<del>3</del> *2			<del>CR</del>			
		<del>Auxiliary Operators</del>	<del>2</del>			<del>CR</del>			
Emergency Direction and Control	Site utility Emergency Management	<del>Shift Technical Advisor</del>	<del>1</del>			<del>CR</del>	Assumed by the <del>Operations Shift Manager / Control Room Supervisor</del> OSM until relieved		
		Operations Shift Manager (CFH)	*			CR			
Notification/ Communications	Notify licensee, state, local & federal personnel and maintain communications	<del>Operations Shift Communicator</del> Manager (CFH)	<del>1</del> *1			CR	Assumed by the OSM until relieved		
		TSC Operations Liaison			2	TSC			
		<del>NRC ENS Communicator</del>			1	TSC			
		<del>NRC ENS Communicator</del>			2	1		EOF	
		Rad & EOF Manager				1		EOF	
		<del>EOF Ops Liaison</del>							
Radiological Accident Assessment and Support of Operational Accident Assessment	Overall utility Emergency Management and offsite agency interface	Emergency Coordinator			1	TSC			
		Emergency Response and Recovery Director			1	EOF			
	Offsite Dose Assessment and Protective Action Recommendations		<del>Site Rad Protection Coordinator</del>	*		2	TSC	Performs dose assessment until relieved	
			<del>MIDAS Operator</del> NCO						
			<del>Rad Assessment Coordinator</del>			2	1		EOF/TSC
			<del>MIDAS Operator</del> Site Radiation Protection Coordinator						
			MIDAS Operator			1			TSC
			Rad Assessment Coordinator			1			EOF
			MIDAS Operator			1			EOF
			<b>Page 1 Subtotal</b>			<b>93</b>	<b>108</b>		<b>02</b>

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Table B-1  
On-Shift Staffing & Staff Augmentation Assignments

Major Functional Areas	Major Tasks	Position Title or Expertise (All positions are 24-hour staffing)	On-Shift * = see Comments	Capability for additions		Response Location	Comments	
				60 min	90 min			
Plant System Engineering Repair and Corrective Actions	Offsite Surveys	HP Technician		<del>1</del> *1	<del>1</del> *	OSC	May be staffed by Plant Personnel trained in the HP role for Field Teams.	
		DAEC Staff Member HP Technician		1	<del>1</del>	OSC OSC	May be staffed by Plant Personnel trained in the HP role for Field Teams	
		DAEC Staff Member HP Technician	1	<del>1</del> *1	<del>1</del>	OSC EOFOSC	May be staffed by Plant Personnel trained in the HP role for Field Teams.	
	Onsite and in-plant Surveys (Out of plant)  Inplant Surveys Chemistry/ Radiochemistry Technical Support	DAEC Staff Member HP Technician				1	OSC	
		HP Technician	1		<del>1</del>	OSC	Performed by HP Technician until relieved	
		Core/Thermal/Hydraulics Tech and Engineering Supervisor			1	TSC		
		Electrical Engineer Mechanical Engineer			<del>1</del>	TSC TSC		
		OSC Supervisor			1	OSC		
		Mechanical Maintenance			1	OSC		
		Electrical Maintenance			1	OSC		
Repair and corrective actions	Instrument and Control (I&C) Technician				<del>1</del>	OSC		
	HP Technicians	<del>1</del> *		1	<del>1</del>	OSC	Performed by RP Technician responsible for onsite and in-plant surveys	
Protective Actions (in plant)	Radiation Protection including Access control, RP coverage for repair and corrective action, search & rescue, first aid and firefighting: A) Access Control B) HP Coverage for Repair, Corrective Actions, Search & Rescue, First aid, & Fire fighting C) Habitability D) Dosimetry							
<b>Page 2 Subtotal</b>				<del>31</del>	<del>129</del>	<del>84</del>		

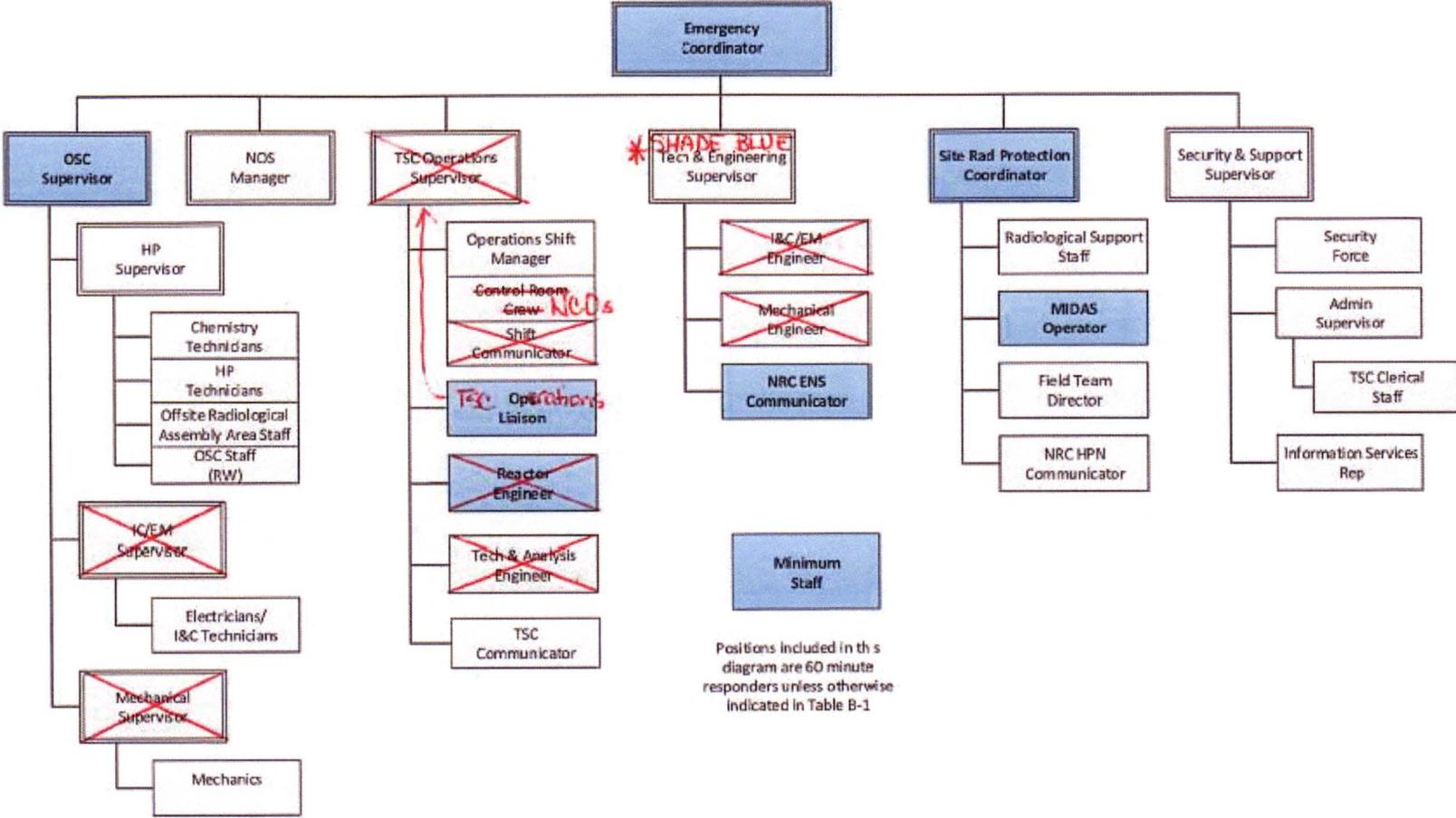
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Table B-1  
On-Shift Staffing & Staff Augmentation Assignments

Major Functional Areas	Major Tasks	Position Title or Expertise (All positions are 24-hour staffing)	On-Shift * = see Comments	Capability for additions		Response Location	Comments
				60 min	90 min		
Fire Fighting			4	*	Local	Support	Fire Brigade per FP-AB-100. May be provided by shift personnel assigned other functions. All per Security Plan.
Rescue Operations and First Aid				*	Local	Support	
Site Access Control and Personnel Accountability	Security, fire fighting, Communications, personnel accountability	Security		*			
Page 1 Subtotal			93	108	02		
Page 2 Subtotal			31	129	84		
Page 3 Subtotal			4	0	0		
GRAND TOTAL			168	2217	86		

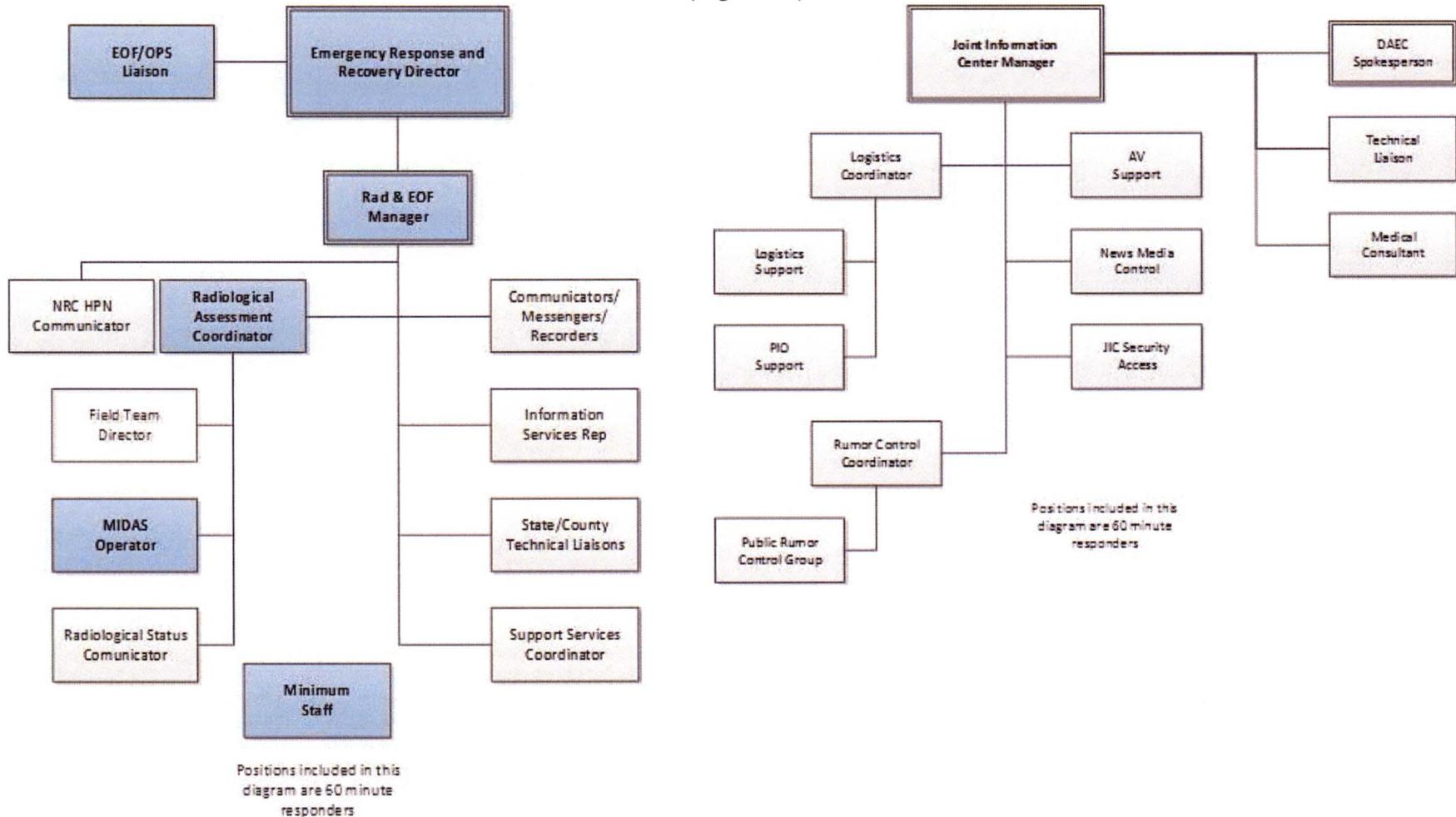
<b>DAEC EMERGENCY PLAN</b>	<b>SECTION 'B'</b>
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Figure B-1  
 ONSITE EMERGENCY RESPONSE ORGANIZATION  
 (Page 1 of 2)



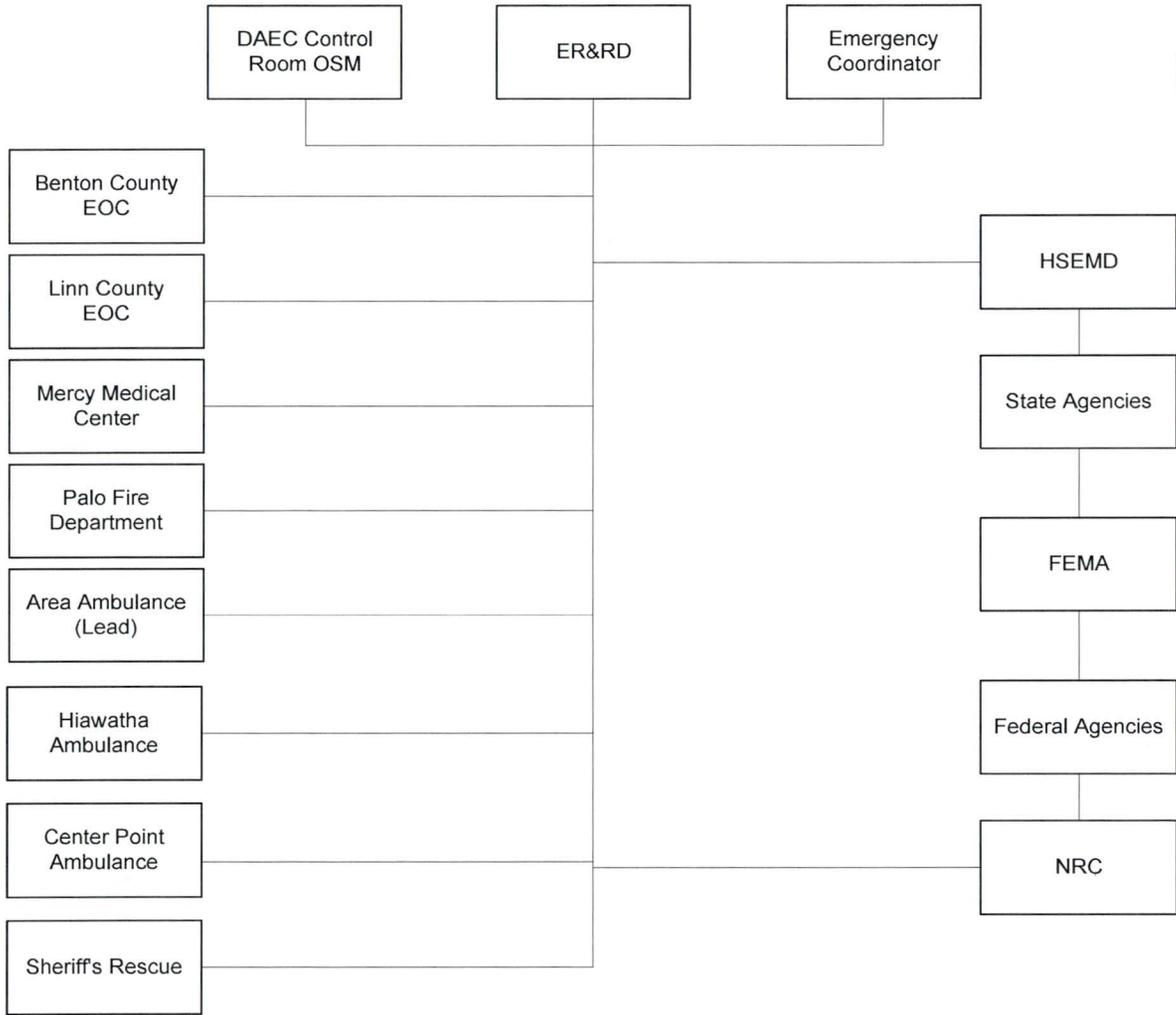
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Figure B-1  
CORPORATE EMERGENCY RESPONSE ORGANIZATION  
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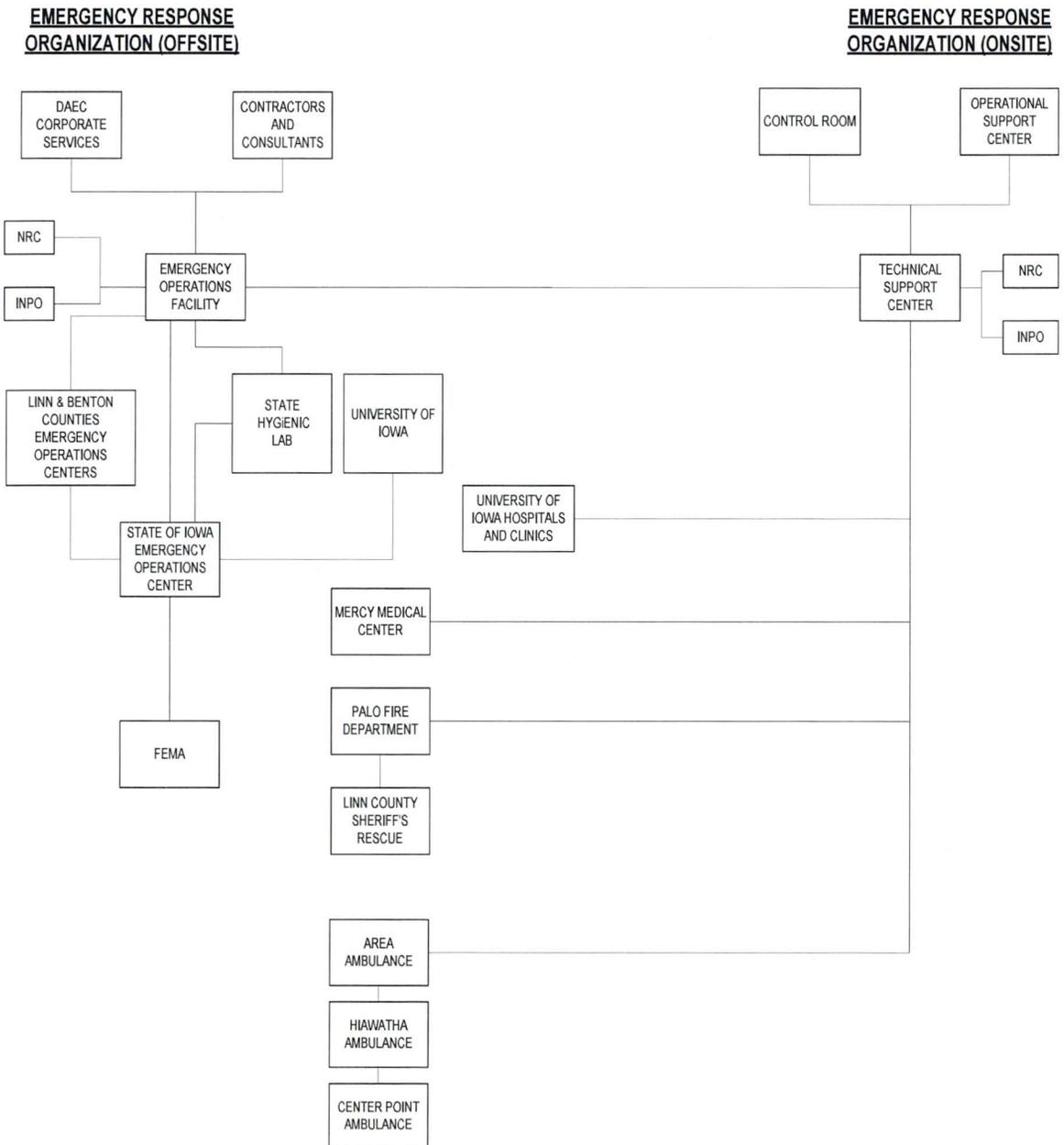
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Figure B-2  
IMMEDIATE RESPONSE INTERFACE



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Figure B-3  
LONG-TERM RESPONSE INTERFACE



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**APPROVAL BY EMERGENCY PREPAREDNESS MANAGER**

Approved By \_\_\_\_\_ / \_\_\_\_\_ Date: \_\_\_\_\_  
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**APPROVAL BY ORG**

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**APPROVAL BY DAEC SITE VICE PRESIDENT**

Approved By \_\_\_\_\_ / \_\_\_\_\_ Date: \_\_\_\_\_  
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**APPROVAL BY CORPORATE DIRECTOR OF EMERGENCY PLANNING**

Approved By \_\_\_\_\_ / \_\_\_\_\_ Date: \_\_\_\_\_  
Print Signature

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3.0	EMERGENCY ACTION LEVEL (EAL) INITIATING CONDITIONS	5
Attachment 1	TABLE D-1 IMMEDIATE ACTION TABULATION	7

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## **1.0 PURPOSE**

- (1) This section describes the system used to classify emergency conditions. This system is consistent with that set forth in Appendix 1 of NUREG-0654 and is the system used by state and local organizations. The Emergency Action Levels established for each emergency classification are reviewed annually with offsite authorities who are responsible for implementing protective measures for the population at risk.

## **2.0 EMERGENCY CLASSIFICATION SYSTEM**

- (1) Each emergency classification is associated with a particular set of immediate actions that are identified in EPIP Manual Appendix 1, forms EAL-01 and EAL-02. Specific details regarding required actions to be taken at the DAEC for each class of emergency are specified in the EPIPs. The specific instruments, parameters, and status indicators used to establish the emergency classification are specified in the Emergency Plan Implementing Procedures. If an emergency condition changes in severity, it will be reclassified and the corresponding response actions will escalate or de-escalate accordingly.
- (2) The highest emergency classification for which an Emergency Action Level (EAL) is currently met should be DECLARED. If an action level for a higher classification is exceeded but the situation is resolved prior to offsite notification, the higher classification should be REPORTED to the offsite agencies and the NRC, but SHOULD NOT be declared. The notification must indicate the CURRENT classification, the period of time that the higher classification existed and the mitigating conditions that caused the reduction in the emergency classification.

### **2.1 NOTIFICATION OF UNUSUAL EVENT**

- (1) This class of emergency conditions includes the least severe events requiring offsite notification. This classification will be declared whenever events are in progress or have occurred which indicate a potential degradation of the level of safety of the plant or indicate a security threat to facility protection has been initiated. No release of radioactive material requiring offsite response or monitoring are expected unless further degradation of safety systems occurs.

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## 2.2 ALERT

- (1) The ALERT emergency condition is the second class in increasing order of severity. This emergency classification will be declared whenever events are in progress or have occurred which involve an actual or potential substantial degradation of the level of safety of the plant or a security event that involves probable life threatening risk to site personnel or damage to site equipment because of HOSTILE ACTION. Any releases are expected to be limited to small fractions of the EPA Protective Action Guideline exposure levels. Accidents analyzed in Chapter 15 of the Updated Final Safety Analysis Report that fit this classification include the **Refueling-Fuel Handling** Accident.

## 2.3 SITE AREA EMERGENCY

- (1) The SITE AREA EMERGENCY condition is the third class in increasing order of severity and requires immediate notification of the public. This classification will be declared whenever events are in progress or have occurred which involve actual or likely major failures of plant functions needed for protection of the public or HOSTILE ACTION that results in intentional damage or malicious acts; (1) toward site personnel or equipment that could lead to the likely failure of or; (2) prevents effective access to equipment needed for the protection of the public. Any releases are not expected to result in exposure levels which exceed EPA Protective Action Guideline exposure levels beyond the site boundary. ~~Accidents analyzed in Chapter 15 of the Updated Final Safety Analysis Report that fit this classification are Control Rod Drop, Loss of Coolant, and Main Steam Line-Break.~~

## 2.4 GENERAL EMERGENCY

- (1) The GENERAL EMERGENCY condition is the most severe and requires immediate notification of the public. This emergency classification will be declared whenever events are in progress or have occurred which involve ~~actual or imminent substantial core degradation or melting with potential for loss of containment integrity or a~~ HOSTILE ACTION that results in an actual loss of physical control of the facility, ~~or releases that~~ can be reasonably expected to exceed EPA Protective Action Guideline exposure levels offsite. ~~for more than the immediate site area.~~

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### **3.0 EMERGENCY ACTION LEVEL (EAL) INITIATING CONDITIONS**

- (1) The EAL Tables, located in the EPIP Manual Appendix 1, forms EAL-01 and EAL-02, identify the specific conditions and associated limits that serve as the basis for initiating the appropriate monitoring, assessment, and response actions described in this plan. As the severity of each condition increases, the event is classified (or reclassified), based upon instruments, equipment status, and parameters identified in the EAL Tables to assure that appropriate emergency response actions are being taken.
  
- (2) The EALs are based upon one or more of the following criteria:
  - (a) System design specifications
  - (b) Technical Specification limits
  - (c) FSAR accident analyses
  - (d) 10CFR20 and 10CFR100 requirements
  - (e) EPA 400-R-92-001 Manual of Protective Action Guides and Protective Actions for Nuclear Incidents (dated October 1991 with 2nd printing May 1992)
  - (f) NUREG-0578, "TMI-2 Lessons Learned Task Force Status Report and Short-Term Recommendations."
  - (g) NUREG-0654, FEMA-REP-1, Revision 1, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants."
  - (h) NEI Methodology for Development of Emergency Action Levels NEI 99-01, Revision 5, February 2008
  - (i) NRC Bulletin 2005-02, Emergency Preparedness and Response Actions for Security-Based Events, July 18, 2005 as clarified by NEI Industry White Paper Dated November 15, 2005

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- (3) The EALs to be initiated are not necessarily based upon actual radiological exposures to the population at risk, but rather are based upon the potential exposures or specific plant conditions that may pose a threat to the population at risk.
- (4) The release rates and release rate calculations established for the EALs are based upon an assumed isotopic mix at the time of the event and are calculated using the MIDAS computer model. Effluent release rate levels have been identified for both the SITE AREA EMERGENCY and GENERAL EMERGENCY classifications. The monitor readings established for the SITE AREA EMERGENCY are based upon adverse meteorology while those established for the GENERAL EMERGENCY are based upon normal meteorological conditions. The limiting case for releases from the Off-Gas Stack, an elevated release with the Standby Gas Treatment System (SBGT) in operation, is Deep Dose Equivalent (whole body dose) rates. All other release paths are assumed to be secured. The limiting case for release from the Turbine Building Ventilation Exhaust Stack, a mixed mode release without the benefit of treatment via SBGT, is Committed Dose Equivalent (thyroid dose) rates. Again, all other release paths are assumed to be secured. Since the projected site boundary dose rates are based upon assumed meteorological conditions, these levels will serve as a warning to calculate projected doses using actual meteorological conditions in order to properly classify the condition.
- (5) High range containment radiation monitor levels have been established for the SITE AREA and GENERAL EMERGENCY classifications. These levels are based on 10% and 20% gap release, respectively. The relationship between percentage gap release and containment monitor response values is delineated in NG-88-0966.
- (6) EALs are conservatively established for the SITE AREA EMERGENCY, and ensure that offsite support agency actions are taken in a timely manner. The EALs for the GENERAL EMERGENCY are established to provide a more realistic basis for evacuation or sheltering decisions.

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**TABLE D-1  
IMMEDIATE ACTION TABULATION**

**NOTIFICATION OF UNUSUAL EVENT**

Class Description

Events are in progress or have occurred which indicate a potential degradation of the level of safety of the plant or indicate a security threat to facility protection has been initiated. No release of radioactive material requiring offsite response or monitoring are expected unless further degradation of safety systems occur.

Purpose

The purpose of this classification is to (1) assure that the first step in any response later found to be necessary has been carried out, (2) bring the operating staff to a state of readiness, and (3) provide systematic handling of unusual events information and decision making.

**NextEra Energy DAEC ACTIONS**

1. Inform local and State authorities and the NRC of the condition, significant actions taken or under way, and any need for assistance.
2. Augment on-shift resources if required as a precautionary measure.
3. Assess and respond.
4. Escalate to a more severe classification, if appropriate.
5. Notify key organizational personnel based upon plant conditions and the character of the event, as appropriate.
6. Establish discussions with NRC, as appropriate.
7. If the abnormal condition becomes more severe, further actions to be taken shall be as prescribed for the emergency classification assigned.

Following restoration from the abnormal conditions, the following actions will be taken:

1. Inform local and state public officials of significant actions taken or under way and any need for assistance, as appropriate.
2. Issue a news statement, as appropriate.

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**TABLE D-1  
IMMEDIATE ACTION TABULATION**

**ALERT**

Class Description

Events are in progress or have occurred which involve an actual or potential substantial degradation of the level of safety of the plant or a security event that involves probable life threatening risk to site personnel or damage to site equipment because of HOSTILE ACTION. Any releases are expected to be limited to small fractions of the EPA Protective Action Guideline exposure levels.

Purpose

The purpose of this classification is to (1) assure that emergency personnel are ready, available to respond if the situation becomes more serious, or to perform confirmatory radiation monitoring if required, and (2) provide offsite authorities current information.

**NextEra Energy DAEC ACTIONS**

1. Promptly inform local and State authorities and the NRC of the condition, status, and reason for emergency as soon as discovered.
2. Augment resources and activate the responders for the Technical Support Center and Operational Support Center. Bring the Emergency Operations Facility, Joint Information Center, and other key personnel to standby status or activation.
3. Assess and respond.
4. Determine need to dispatch onsite and offsite monitoring teams and associated communications.
5. Provide periodic plant status updates to offsite authorities.
6. Provide periodic meteorological assessments to offsite authorities and, if any releases are occurring, dose estimates for actual releases.
7. Escalate to a more severe classification, if appropriate.
8. Establish follow up discussions with the NRC.
9. Issue news statements, as appropriate.
10. If the plant condition becomes more severe, further actions to be taken shall be as prescribed for the emergency classification assigned.

Following restoration of the plant to a stable, safe shutdown condition, the following actions will be taken:

1. Inform local and state authorities of close out or reduction of emergency class.
2. Issue a summary news statement, as appropriate.

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**TABLE D-1  
IMMEDIATE ACTION TABULATION**

**SITE AREA EMERGENCY**

Class Description

Events are in progress or have occurred which involve actual or likely major failures of plant functions needed for protection of the public or HOSTILE ACTION that result in intentional damage or malicious acts; (1) toward site personnel or equipment that could lead to the likely failure of or; (2) prevents effective access to equipment needed for the protection of the public. Any releases are not expected to result in exposure levels which exceed EPA Protective Action Guideline exposure levels beyond the site boundary.

Purpose

The purpose of this classification is to (1) assure that response centers are staffed, (2) assure that monitoring teams are dispatched, (3) assure that personnel required for evacuation of near-site areas are at duty stations if the situation becomes more serious, (4) provide consultation with offsite authorities, and (5) provide updates for the public through offsite authorities.

**NextEra Energy DAEC ACTIONS**

1. Promptly inform local and state authorities and the NRC of the condition, status, and reason for emergency as soon as discovered.
2. Augment resources by activating the responders for the Technical Support Center, Operational Support Center, Emergency Operations Facility and the Joint Information Center.
3. Assess and respond.
4. Dispatch onsite and offsite monitoring teams and associated communications.
5. Dedicate an individual for plant status updates to offsite authorities and periodic press briefings.
6. Make senior technical and management staff onsite available for consultation with the NRC and the State who will contact the DOE and FEMA on a periodic basis.
7. Provide meteorological information and dose estimates to offsite authorities for actual releases.
8. Provide release and dose projections based on available plant conditions and foreseeable contingencies.
9. Initiate communications with industry liaison groups (i.e., INPO) to apprise them of the emergency situation.
10. Prepare to conduct press briefings and issue news statements.
11. Escalate to GENERAL EMERGENCY class, if appropriate.
12. Inform local and state authorities of the closeout or reduction of the emergency class.

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**TABLE D-1  
IMMEDIATE ACTION TABULATION**

**GENERAL EMERGENCY**

Class Description

Events are in progress or have occurred which involve ~~actual or imminent substantial core degradation or melting with potential for loss of containment integrity or a~~ HOSTILE ACTION that results in an actual loss of physical control of the facility, ~~or releases that~~ can be reasonably expected to exceed EPA Protective Action Guideline exposure levels offsite ~~for more than the immediate site area.~~

Purpose

The purpose of this classification is to (1) initiate predetermined protective actions for the public, (2) provide continuous assessment of plant information and radiological monitoring measurements taken by licensee and offsite organizations, (3) initiate additional measures as indicated by actual or potential releases, (4) provide consultation with offsite authorities and (5) provide updates for the public through offsite authorities.

**NextEra Energy DAEC ACTIONS**

1. Promptly inform local and state authorities and the NRC of the condition, status, and reason for emergency as soon as discovered.
2. Augment resources by activating the responders for the Technical Support Center, Operational Support Center, Emergency Operations Facility, and the Joint Information Center.
3. Assess and respond.
4. Dispatch onsite and offsite monitoring teams and associated communications.
5. Dedicate an individual for plant status updates to offsite authorities and periodic press briefings.
6. Maintain communications with the NRC. Make senior technical and management staff onsite available for consultation with the NRC and the State on a periodic basis.

7. Provide meteorological information and dose estimates of actual releases to offsite authorities.
8. Provide release and dose projections based on available plant conditions and foreseeable contingencies.
9. Maintain communications with industry liaison groups to ensure they are fully apprised of the status of the event and the potential ramifications.
10. Conduct periodic press briefings and issue news statements to ensure the public is apprised of the status of the event and the actions being taken to minimize its effect upon the public and the environment.
11. Evaluate the resources and capabilities of the overall emergency response organizations and restructuring, as appropriate, to assist in determining, tracking, and assessing the environmental consequences of the event.
12. Achieve stable plant conditions.
13. Investigate the consequences of the accident.

As conditions warrant, the emergency classification will be downgraded and actions specified for the appropriate classification will be continued. Following restoration of the plant to a stable and safe shutdown condition, the following actions shall be taken:

1. Inform local and state authorities of closeout or downgrading of the emergency classification.
2. Issue summary news statement, as appropriate.

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## **1.0 PURPOSE**

- (1) This section describes the methods and procedures used by NEE Duane Arnold to transmit emergency information to the Emergency Response Organization, local and state authorities, and subsequently, from such authorities to the public. Details required in the initial and follow-up message are described, along with a description of the types of news statements that will be used to provide the public with information and protective actions.

## **2.0 REQUIREMENTS**

- (1) Methods used to accomplish notification of the Emergency Response Organization include the use of call lists contained in the Emergency Telephone Book, pager and automated telephone callout process.
- (2) The Emergency Telephone Book includes phone numbers and pager numbers (where applicable) of emergency response personnel who may be required to respond to an emergency condition. It also includes the 24-hour telephone numbers of local, state, and federal support agencies including the NRC. The NRC would normally be notified using the NRC ENS Telephone (FTS-2001 System) from the Control Room. The state and counties would normally be notified by a dedicated telecommunications link.

### **2.1 INITIAL NOTIFICATION**

- (1) After declaration of an emergency condition, the Operations Shift Manager/~~Supervisor~~ will ensure that the following personnel and agencies are notified:

- Linn and Benton Counties
- State of Iowa
- NRC Operations Center
- Emergency Coordinator
- Emergency Response and Recovery Director
- NRC Resident Inspectors

- (2) Verification of Notification

- (a) The authenticity of initial notifications provided to Linn and Benton Counties and the State of Iowa do not require verification if the notification is made by the dedicated phone system.
- (b) Local and state agencies notified by commercial communication system (telephone or facsimile) may require verification of the identity and authenticity of the caller and the message received.

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## 2.2 NOTIFICATION AND ACTIVATION OF THE ERO

### (1) NOTIFICATION OF UNUSUAL EVENT

- (a) Activation of emergency facilities (refer to Section H), such as the TSC, the OSC, the EOF, or the JIC will be as directed by the Emergency Coordinator, ER&RD, and JIC Manager, respectively. Normally, these emergency facilities will not be activated for a NOTIFICATION OF UNUSUAL EVENT, but may be, if escalation of the emergency class appears to be imminent.

### (2) ALERT, SITE AREA EMERGENCY, OR GENERAL EMERGENCY

- (a) The Operations Shift Manager/~~Control Room Supervisor~~, or another member of the shift operating crew, at the direction of the Operations Shift Manager/~~Control Room Supervisor~~, shall notify onsite personnel by activation of a distinctive tone alarm over the public address system, followed by an announcement over the public address system. Off-duty emergency response personnel will be notified in accordance with the EPIPs describing notification and call out of off-duty personnel. The Emergency Telephone Book contains the telephone numbers and, if applicable, pager numbers of emergency response personnel.
- (b) The onsite Emergency Response Organization personnel shall initially report to the TSC and the OSC at an Alert or higher classification. As personnel arrive at the Operational Support Center, they should select their own nameplate and place it into their response position. The instructions are designated in Emergency Plan Implementing Procedures and cover radiological survey, monitoring, communication, record-keeping, rescue, and emergency repair efforts.
- (c) The Emergency Coordinator will initiate notification of the following emergency response officials and agencies and provide them with additional information, as appropriate, until relieved by the ER&RD:
- Local, state and federal governmental officials and support agency management personnel, as warranted, based upon the severity and potential ramifications of the event,
  - INPO Emergency Response Center.
  - Further information and instructions are provided in the supporting implementing procedures.
- (d) Onsite personnel who staff the EOF and the JIC will report to their facilities at an Alert classification. The ER&RD in conjunction with the JIC Manager will determine when the EOF and JIC will be activated as indicated in the EPIPs.

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**2.3 INITIAL MESSAGES TO OFFSITE AUTHORITIES**

(1) The initial notification message relayed to offsite authorities will provide the following information:

- Caller identification/location.
- Event classification, EAL number, and time of declaration.
- If radiological release is in progress, type of release and projected duration of release and if airborne release, state whether the release is filtered or unfiltered.
- Wind direction and wind speed.
- Recommended protective actions, if any.
- Assistance, if any, which may be required.

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## 2.4 FOLLOW-UP MESSAGES TO OFFSITE AUTHORITIES

- (1) After initial notifications have been made from the DAEC to the various offsite organizations, responsibility for communications with offsite agencies will normally be assumed by the TSC until the EOF is staffed.
- (2) The following information will be provided if known and appropriate to the circumstances:
  - Location of incident and name of caller.
  - Date/time of incident.
  - Emergency classification.
  - Type of actual or projected release (airborne, waterborne, surface spill) and estimated duration/impact times, filtered or unfiltered if the release is an airborne release.
  - Estimate of quantity of radioactive material released or being released and the point of release.
  - Chemical and physical form of released material, including estimates of the relative quantities and concentrations of noble gases, iodines, and particulates.
  - Meteorological conditions (wind velocity, direction, temperature, atmospheric stability data, form of precipitation, if any).
  - Actual or projected dose rates and integrated doses at the site boundary; and at about 2, 5, and 10 miles.
  - Estimates of any surface radioactive contamination in the plant, onsite or offsite.
  - Emergency response actions under way.
  - Recommended emergency actions, including protective measures.
  - Requests for any needed onsite support by offsite organizations.
  - Prognosis of event based on plant information.

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**2.5 METHODS OF PROVIDING PROMPT PUBLIC NOTIFICATION**

- (1) A fixed offsite siren warning system providing an audible alert has been installed within the DAEC Plume Exposure Emergency Planning Zone (EPZ). The EPZ includes subareas and is defined in Section I of this plan, Figure I-1. The audible warning sirens will alert the populace to listen to radios or televisions for detailed information.
- (2) The offsite warning system is designed to alert essentially 100% of the population in the DAEC EPZ. Activation of the system can be accomplished within fifteen minutes of issuance of an advisory from the Linn County Emergency Management Agency, Linn County Sheriff's Office, Benton County Emergency Management Agency, or Benton County Sheriff's Department. Each county can act as a backup to the other.
- (3) In the unlikely event that one or more sirens would fail to activate, the State of Iowa and Linn and Benton Counties maintain a backup Alert and Notification System that will alert the public in affected areas. This system covering the EPZ is achieved through physical route alerting, which is contained in the State of Iowa Radiological Emergency Response Plan and in Linn and Benton County's Radiological Emergency Response Plans and procedures. These plans and procedures are approved by FEMA in accordance with 44CFR350.12 and 14.

**2.6 METHODS OF PROVIDING PUBLIC INFORMATION CONCERNING PROTECTIVE MEASURES**

- (1) Section 2.5 identifies the methods to be used to notify the public, specifically those in the plume exposure pathway EPZ, of the occurrence of an emergency event. Recommendations regarding protective measures to be implemented for the population at risk will be provided to both county and state officials by the Emergency Coordinator prior to EOF activation, then by the Radiological and EOF Manager. Initial information to expedite the taking of protective measures by the public will be provided by using the Emergency Alert System (EAS).
- (2) Messages to the public generated by a computerized EAS message generation system, will include appropriate aspects of protection; e.g., sheltering, ad hoc respiratory protection or evacuation. Formatted messages are included in the county plans and are the responsibility of Linn and Benton County Emergency Management Agencies.

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## **1.0 PURPOSE**

- (1) This section describes the DAEC emergency communications systems and communications links between the NEE Duane Arnold and other response organizations.

## **2.0 REQUIREMENTS**

### **2.1 GENERAL DESCRIPTION OF NEE DUANE ARNOLD COMMUNICATIONS SYSTEMS**

- (1) DAEC Radiological Survey Radio System
- (a) This radio system (Figure F-1) provides base-to-portable communications for conducting radiological surveys throughout the DAEC plume exposure EPZ. The base station is a mobile relay (repeater) type using two VHF frequencies for a single frequency simplex talk-around, or for monitoring short range portable-to-portable communications in the event the base station is inoperative for a short period of time.
- (b) The installation meets the following functional requirements and limitations:
- (i) Installation of the radio base station equipment in a secure area
  - (ii) Wide area coverage for radiological survey communications
- (c) The base station is controlled from the Technical Support Center, and Emergency Operations Facility.
- (i) The portable radios used are the hand-held type.
  - (ii) The base station radios provide the following channels:
    - DAEC "Field Team" Repeater
    - DAEC "Maintenance" Repeater
    - DAEC "Security Call" Simplex
    - DAEC "Operations" UHF repeater
    - Linn County Fire
    - Point to Point
  - (iii) All channels transmit continuous tone-coded squelch.

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- (iv) The hand-held portables are primarily utilized on the VHF "field team" repeater channel and can be used for communication between personnel on foot, mobiles, and the TSC EOF base stations.
- (v) In addition, the DAEC Radiological Survey teams have three vehicles equipped with a 50-watt radio transceiver for communications to the DAEC at distances greater than obtainable with the high power portables.
- (vi) In addition to the attributes listed above the DAEC Security department has the ability to cross patch the frequencies listed above to specific LLEA frequencies if the need should arise during an emergency event. The details surrounding the capabilities of the security radio system are sensitive in nature and are not included in this document.

(2) DAEC (Backup Radiological Survey) Radio System

- (a) This radio system provides backup capability for the VHF radio listed in (1) and provides base-to-portable communications for conducting radiological surveys throughout the DAEC plume exposure EPZ. The backup system is an 800 MHz trunked repeater system. The 800 MHz tower infrastructure is located on a tower at 1000 27<sup>th</sup> Avenue SW, Cedar Rapids, IA 52404. Two RadioPro Console PC-based dispatch radios support this system. One is located in the DAEC Technical Support Center (TSC), and a second identical dispatch radio is located in the Emergency Operations Facility (EOF) at the Alliant Tower.

(3) Plant Operations Radio

- (a) Figure F-2 illustrates the plant operations radio system which consists of a UHF base station connected to an omni-directional antenna. Seven remote control units are associated with this base station, located in the Control Room, Control Room Backpanel, Technical Support Center, Secondary Alarm Station, Security Control Point, and the Central Alarm Station. Hand-held transceivers are used in this system to provide simplex communications within the plant and onsite.

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(4) Point-to-Point Radio System

(a) The DAEC also has a base station licensed for operation in the Police Radio Service on the law enforcement statewide, point-to-point VHF frequency, as illustrated in Figure F-3. The transmitter and one control console are located at the Secondary Alarm Station, the Central Alarm Station, and Security Control Point. This station is for communications with the Iowa Department of Public Safety radio station, Linn County Sheriff's office, Benton County Sheriff's office, and the Cedar Rapids Fire Department, and uses a two-tone sequential signal to alert the latter two public-safety stations. This point-to-point channel is also used by the Linn County Emergency Management and other public safety organizations throughout the state of Iowa.

(5) ERO Notification systems

NEE Duane Arnold has multiple methods to contact designated ERO members in the event of an emergency. All ERO members will be contacted via a phone call to their home or cell phone as needed. All management personnel filling a key ERO duty position will also have one of the following two methods available.

- (a) A pocket-radio paging system, operated and maintained by a local contractor. The system is designed to enable simultaneous contact of such personnel in the event of an emergency.
- (b) Cell phones or other similar devices that are programmed to be automatically contacted in the event of an emergency.

(6) Microwave Facilities

- (a) NEE Duane Arnold, with a group of Iowa utilities, participates in a shared microwave system, a portion of which is illustrated in Figure F-4. The hub of this system is located at the Alliant Tower in Cedar Rapids. A westerly path extends from Cedar Rapids to the DAEC and contains 24 channels used for outdial telephone, which connect the NEE Duane Arnold phone system in Cedar Rapids to the DAEC phone system.
- (b) Additional microwave facilities provide paths east and west from the DAEC through the Alliant Energy substations at Vinton, Dysart, Traer, Wellsburg, and Marshalltown to complete the microwave loop system from Cedar Rapids. This enables a greater degree of reliability since loop switching equipment is installed at all microwave repeaters in the loop. Thus, if one microwave path becomes inoperative, signals will be switched continuing to provide communications to all points around the loop.

(7) Telephone Facilities

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- (a) Figure F-5 illustrates the telephone system. The system is operated and maintained by the Local Telephone Company and the regional provider which serves the Alliant Tower.
- (b) The DAEC PBX is connected to the central office by 20 active Central Office (CO) trunk lines, 48 long distance trunks, 23 duplex dial trunks, and 24 direct dial trunk lines. The PBX also contains six direct-dial tie trunks to the microwave terminal at the DAEC Substation. The PBX currently handles approximately 1,500 telephone stations.
- (c) There are 4 emergency lines with unlisted numbers which connect directly to the Control Room and several offices but do not connect through the PBX.
- (d) There are 6 dedicated telecommunications circuits which bypass the local system switch in the EOF and directly connect to the public switched network provided by a regional communications provider. There are seven data lines used for computer operations which do not connect through the PBX.
- (e) A LAN/Internet system with satellite backup connects the Linn County EOC and Sheriff's office, the Benton County EOC and Sheriff's office, the State of Iowa EOC, the EOF, the TSC, the Simulator, and the Control Room into a private telephone network referred to as the DAEC All-Call. See Figure F-7.
- (f) Redundant fiber connects the DAEC to the central office. This fiber terminates at the DAC Computer Room.
- (g) A Fixed Cell Phone System connects the DAEC Control Room and TSC with the Shellsburg Cell tower via exterior antenna. This phone system has a UPS power supply in the event of a loss of power.
- (h) A Control Room Satellite Phone System connects the DAEC Control Room to a communications satellite. This phone system provides redundancy from the other DAEC phone systems.
- (i) The Emergency Operations Facility has available:
  - (i) Dedicated circuits to the NRC on the Federal Telecommunications system FTS-2001
  - (ii) PBX connectivity to DAEC through dedicated circuitry provided by a local and regional provider
  - (iii) External phone service, separate from DAEC, provided by a separate regional provider

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- (iv) An All-Call System that provides a communication path between the Control Room, Technical Support Center, Simulator, Emergency Operations Facility, Iowa Homeland Security and Emergency Management Division, Benton County and Linn County Emergency Operations Centers, Benton County and Linn County Sheriff 911 Dispatch Centers via LAN/Internet with satellite backup capabilities
  - (j) The NRC ENS and NRC HPN telephones are both installed and functioning. Both telephones are connected to the Federal Telephone System (FTS-2001). The NRC ENS telephones are located in the Control Room, TSC, and EOF which gives those facilities the capability to contact NRC Headquarters in Rockville, MD. The NRC HPN telephones are located in the TSC and EOF and can be used to call regional NRC offices, the NRC Headquarters, or other sites within the region.
- (8) Emergency Microwave Facilities
- (a) Personnel Contacts for Communications Links
    - (i) Table F-1 lists the primary and alternate communication contacts between NEE Duane Arnold emergency facilities and supporting local, State, and Federal agencies. The communications links are those identified in Figures F-1 through F-4. Table F-1 also identifies, by title, the principal and alternate contacts at each end of each communications link.

**2.2 NOTIFICATION OF LOCAL/STATE EMERGENCY RESPONSE NETWORK**

- (1) As mentioned in Section A, both the Linn County and Benton County Sheriff's Communications Centers are staffed on a continuous basis and may be notified from the DAEC and the EOF by the "DAEC All-Call" telephone, conventional telephone, or facsimile transmission of a condition requiring a response. The State Emergency Operations Center may be notified from the DAEC and the EOF by telephone and facsimile through the Iowa Homeland Security and Emergency Management Division, Iowa Department of Public Defense, by radio through the Department of Public Safety Communications, or by use of the "DAEC All-Call" telephone.

**2.3 COMMUNICATIONS WITH CONTIGUOUS LOCAL/STATE AUTHORITIES**

- (1) After the initial notification of an emergency condition and once the Technical Support Center and Emergency Operations Facility are operational, the Technical Support Center will be the principal onsite communications interface while the Emergency Operations Facility will be the principal offsite communications interface. Communications between local and state agencies and NEE

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Duane Arnold emergency facilities may be by telephone (normal and dedicated lines), network, satellite, or radio as discussed in Section 2.2.

#### **2.4 NEE DUANE ARNOLD COMMUNICATIONS WITH NRC**

- (1) DAEC E-Plan Section E discusses notification methods and procedures. Paragraph 2.1 of this Section F and Figures F-2, F-3, F-4, and F-5 describe the provisions for communicating between NEE Duane Arnold emergency facilities. The NRC will be notified of an emergency condition through the use of the FTS-2001 System (Federal Telecommunications System). The FTS-2001 network provides a separate government network for all essential communications functions to the NRC. Details of the use and operation of the FTS-2001 can be found in the DAEC Emergency Plan Implementing Procedures. (See diagram on Figure F-6)

#### **2.5 COMMUNICATIONS BETWEEN EOCs AND FIELD ASSESSMENT TEAMS**

- (1) Section 2.1 discusses, and Figures F-1 through F-4 illustrate, the provisions for communicating between each emergency center (NEE Duane Arnold, county and state) and with field assessment teams monitoring the offsite radiological impact of the emergency.

#### **2.6 ACTIVATING EMERGENCY RESPONSE PERSONNEL**

- (1) DAEC E-Plan Section E discusses notification methods and procedures for offsite authorities. DAEC E-Plan Section A discusses the interrelationships between response organizations and Figure A-1 illustrates activation and notification lines of responsibility. Figures F-1 through F-4 and Paragraph 2.1 of this section describe the systems for notifying response personnel from onsite and offsite Emergency Response Organizations.

#### **2.7 MEDICAL COMMUNICATIONS**

- (1) Communications with the primary and secondary medical facilities will be accomplished through the use of commercial telephone system. Communications with the ambulance will be accomplished through the use of the Linn County fire frequency radio network.

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## 2.8 PERIODIC TESTS OF COMMUNICATIONS SYSTEMS

- (1) Periodic tests will be conducted to determine the operability of the communications systems discussed in this section. A test (preferably in conjunction with the exercise addressed in DAEC E-Plan Section N) will be performed to test all communications links and notification procedures and the system used to alert the public. The NRC ENS, NRC HPN, and the other telephone lines in the FTS-2001 network will be tested on a monthly basis. The Emergency Response Data System (ERDS) will be tested quarterly by establishing a link with the NRC ERDS system.

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**TABLE F-1**  
**COMMUNICATIONS**  
**PRIMARY AND ALTERNATE CONTACTS**

<u>ORGANIZATION/FACILITY</u>	<u>PRIMARY CONTACT</u>	<u>ALTERNATE CONTACT</u>
1. NEE Duane Arnold		
a. Emergency Operations Facility	Emergency Response & Recovery Director	Radiological & EOF Manager
b. Technical Support Center	Emergency Coordinator	Technical and Engineering Supervisor
c. Operational Support Center	Operational Support Center Supervisor	<del>I&amp;C/EM, Mechanical Maintenance Supervisors</del> or HP Supervisor
d. Control Room and Alarm Stations	Operations Shift Manager/Supervisor	TSC Operations <del>Supervisor</del> Liaison
2. LOCAL AGENCIES		
a. Linn County Sheriff's Office and Emergency Management	County Emergency Management Coordinator	Sheriff's Office Communications Center Operator
b. Benton County Sheriff's Office and Emergency Mgmt.	County Emergency Management Coordinator	Sheriff's Office Communications Center Operator
c. Palo Fire Department	Sheriff's Office Communications Center	
d. Mercy Medical Center	Emergency Room Desk	Sheriff's Office Communications Center Operator
e. University of Iowa Hospitals and Clinics	Emergency Room Desk	-----
f. Center Point Ambulance	Sheriff's Office Communications Center Operator	-----
g. Hiawatha Ambulance	Sheriff's Office Communications Center Operator	-----
h. Area Ambulance	Sheriff's Office Communications Center Operator	-----
i. Linn County Sheriff's Rescue	Linn County Sheriff's Dispatcher	-----

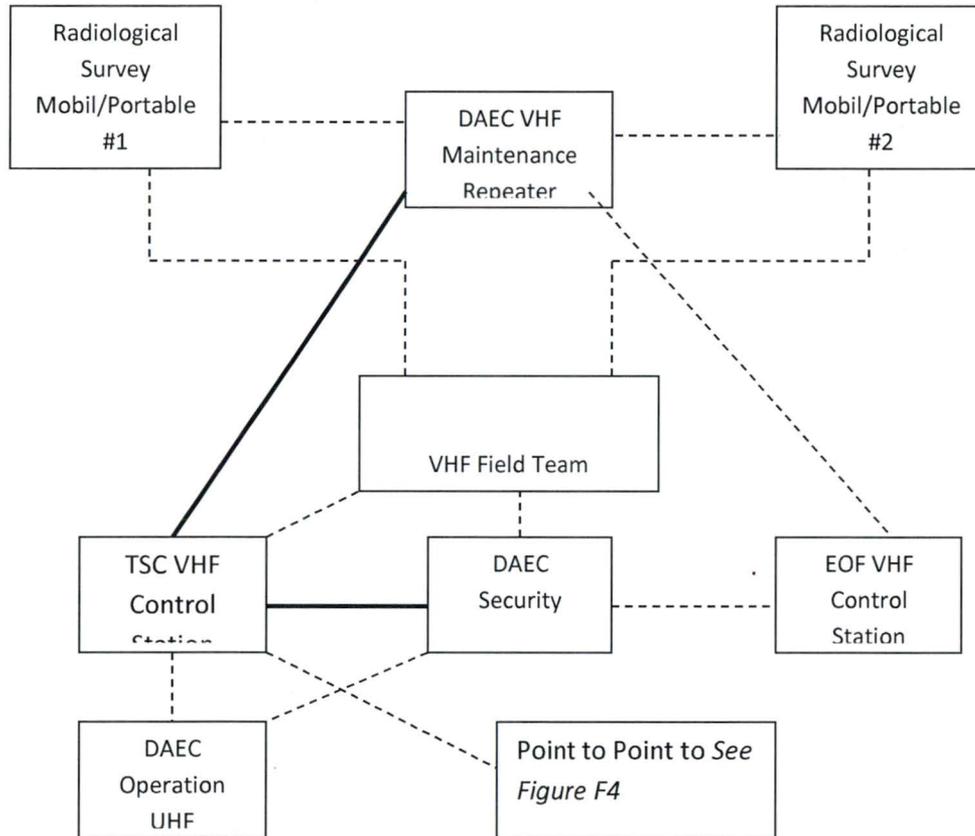
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**TABLE F-1**  
**COMMUNICATIONS**  
**PRIMARY AND ALTERNATE CONTACTS**

<u>ORGANIZATION/FACILITY</u>	<u>PRIMARY CONTACT</u>	<u>ALTERNATE CONTACT</u>
3. STATE AGENCIES		
a. Iowa Homeland Security and Emergency Management Division, Iowa Dept of Public Defense	Iowa Homeland Security and Emergency Management Division Administrator	Department of Public Safety, Communications Station
b. University of Iowa	University Telephone Operator	-----
3. FEDERAL AGENCIES		
a. NRC	Duty Officer (Rockville, Maryland)	NRC Region III Office in Lisle, Illinois
b. Department of Energy	Regional Office in Chicago, Illinois	-----
c. Federal Emergency Management Agency	Contacted by State of Iowa, Iowa Homeland Security and Emergency Mgmt. Division, Iowa Dept of Public Defense	Federal Emergency Management Agency, Region VII, Kansas City, Missouri

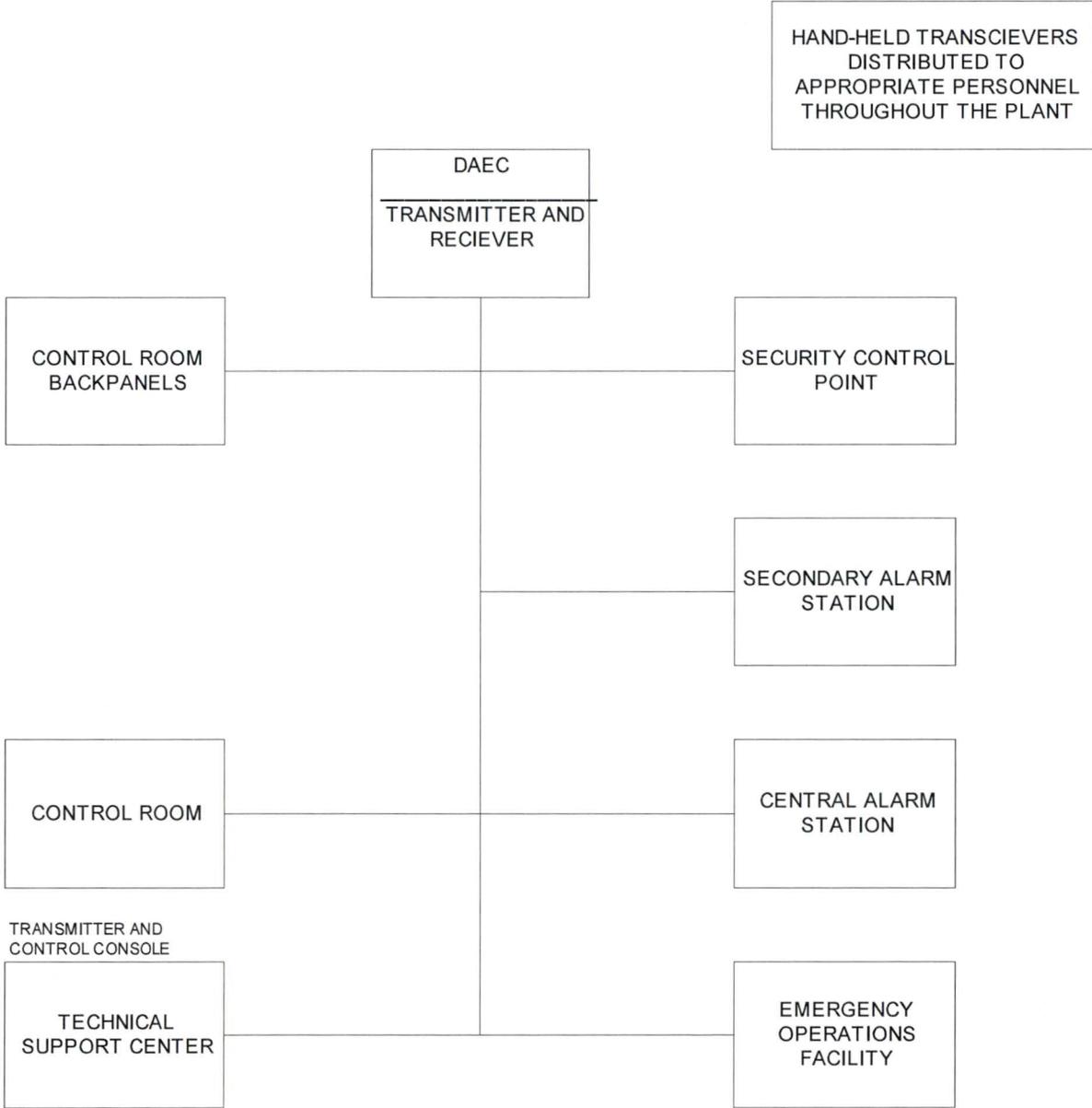
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**FIGURE F-1**  
**DAEC RADIOLOGICAL SURVEY RADIO SYSTEM**



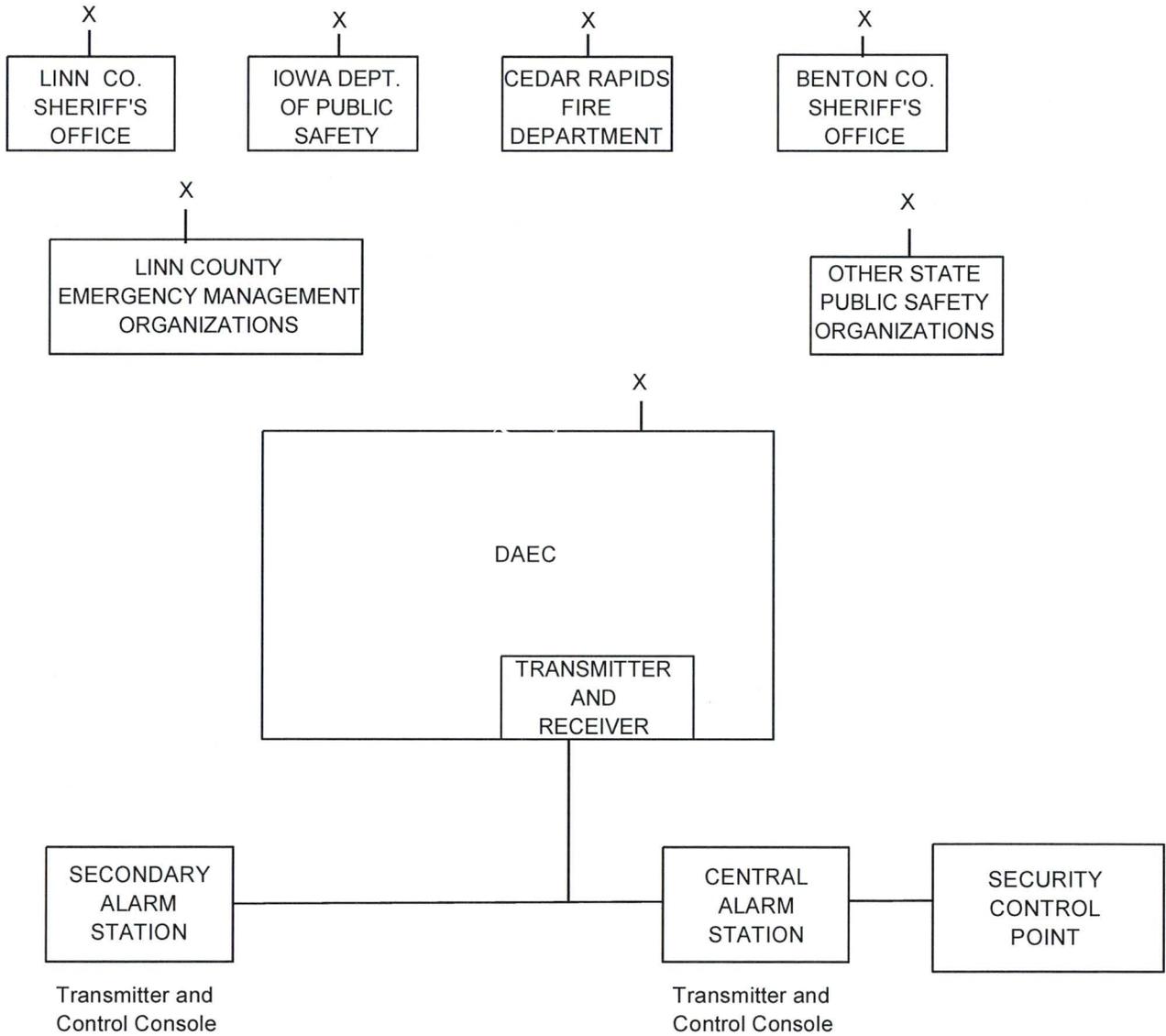
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**FIGURE F-2**  
**PLANT OPERATIONS RADIO SYSTEM**



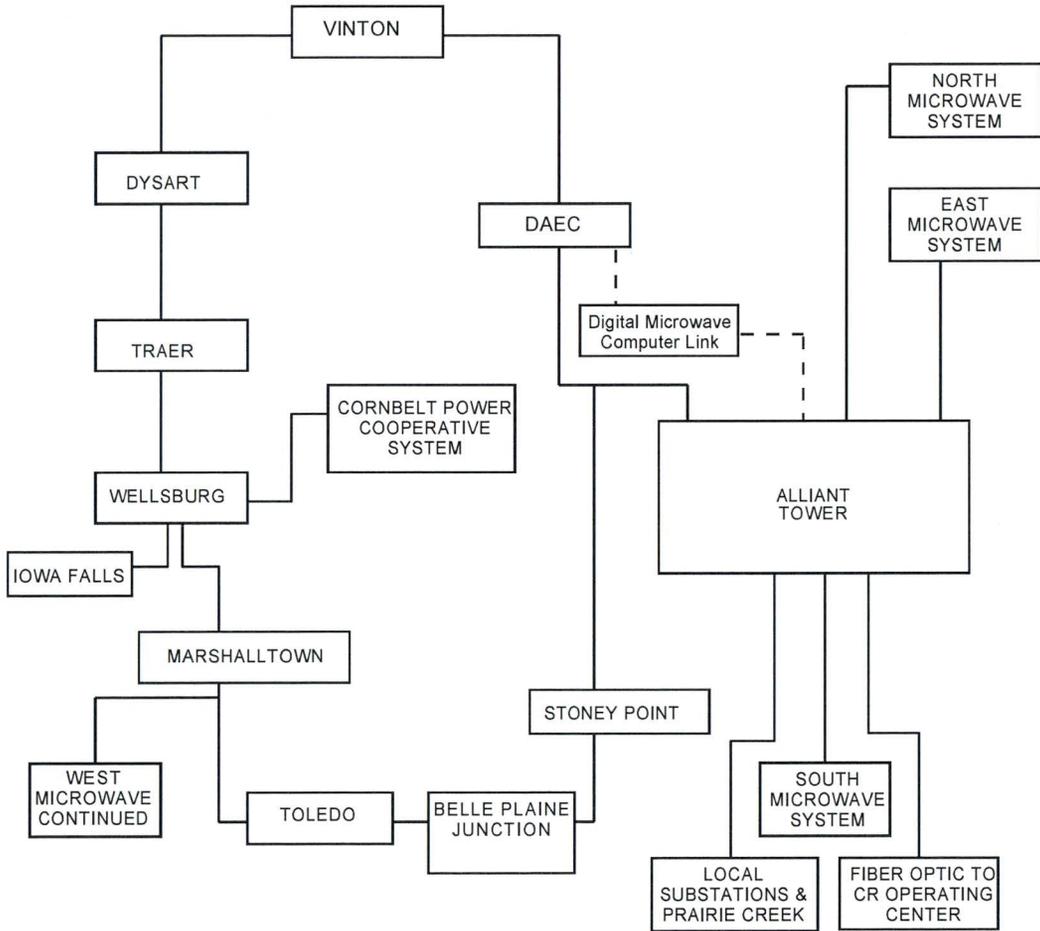
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**FIGURE F-3  
POINT-TO-POINT RADIO SYSTEM**

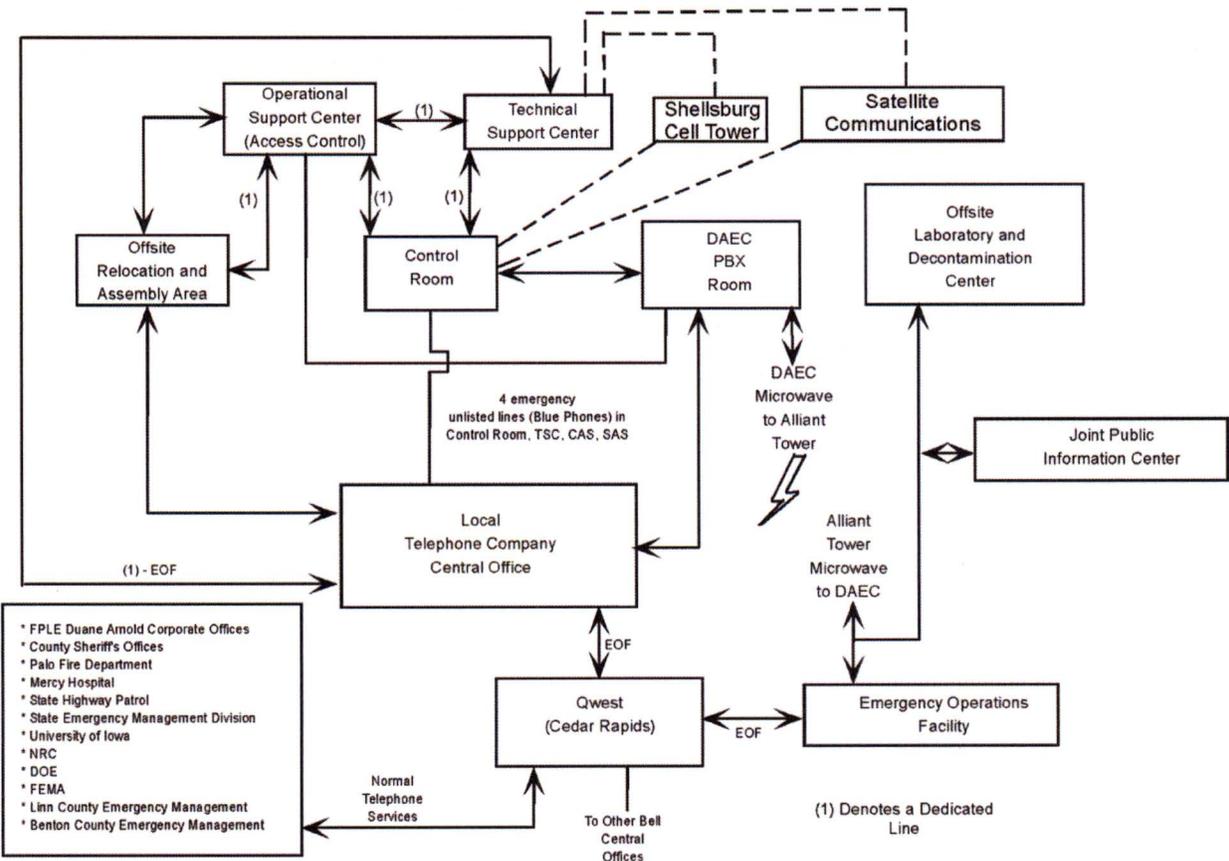


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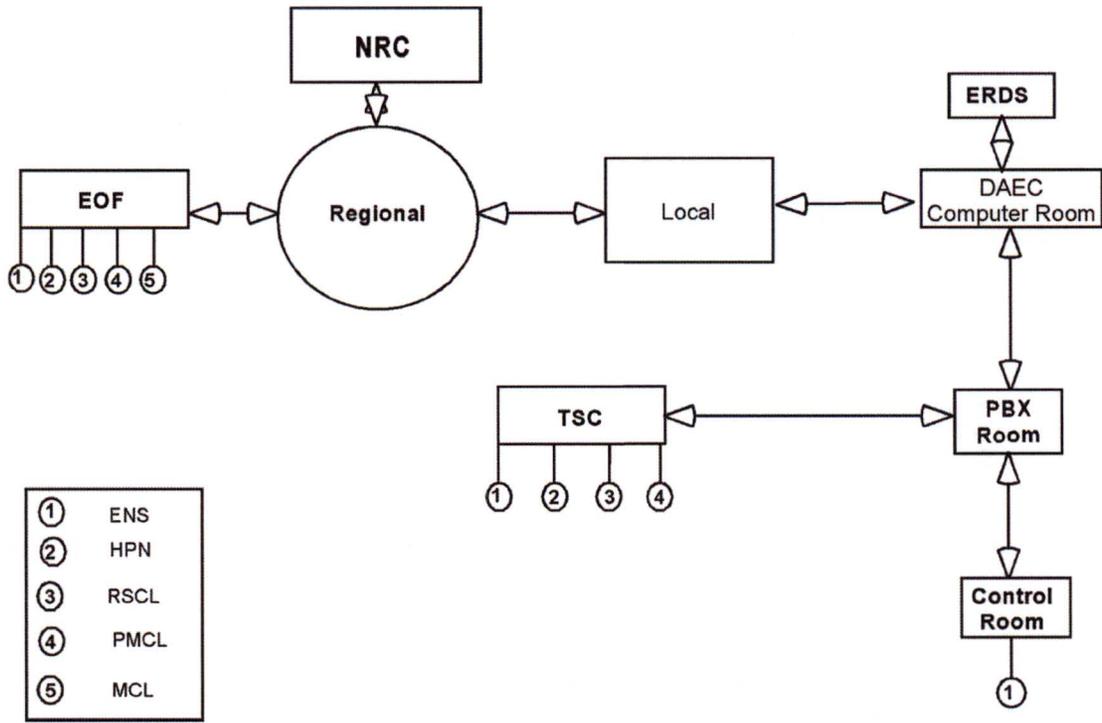
**FIGURE F-4**  
**MICROWAVE FACILITIES**



**FIGURE F-5**  
**DAEC TELEPHONE SYSTEMS**

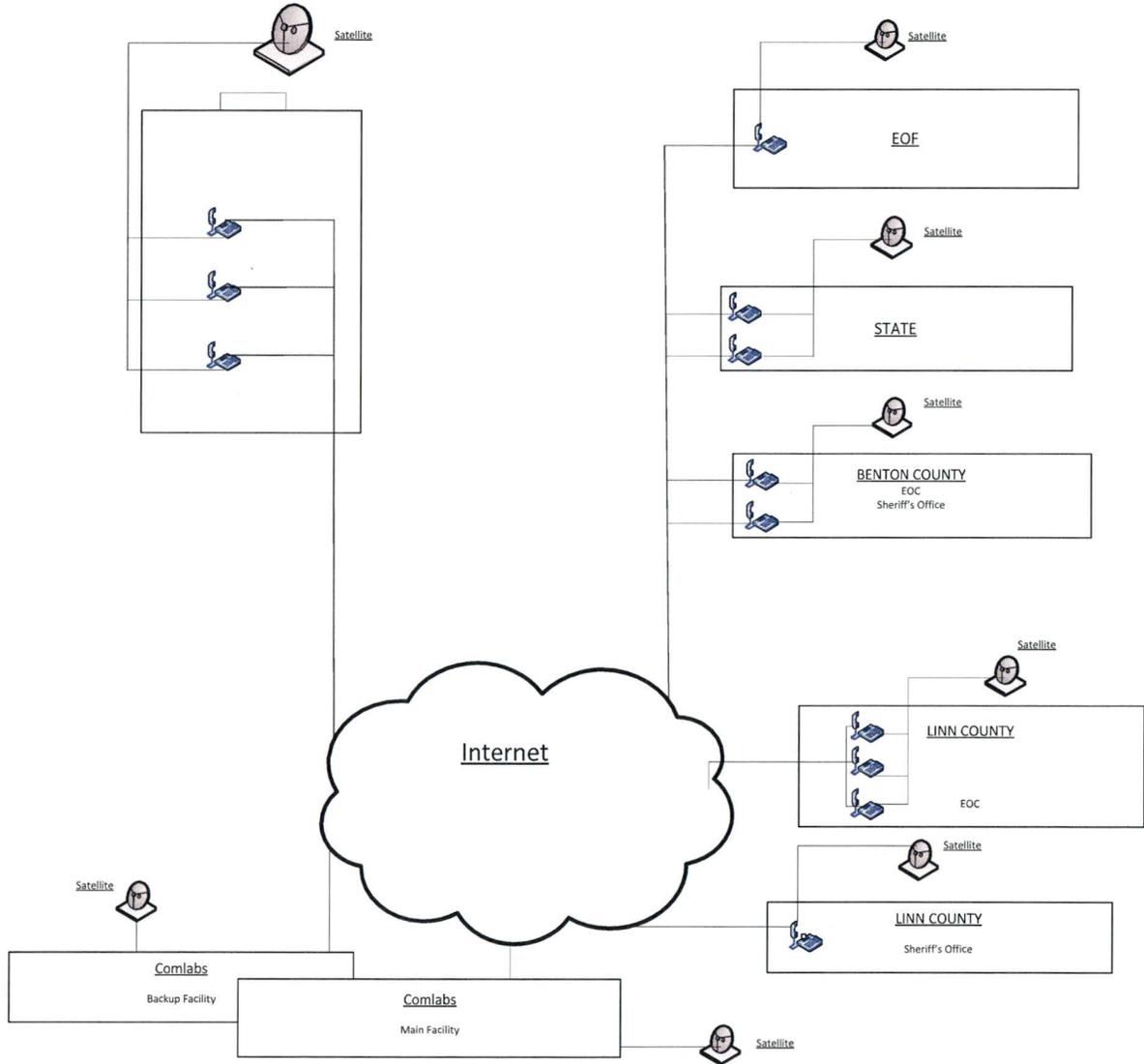


**FIGURE F-6  
FEDERAL TELEPHONE SYSTEM (FTS-2001)**



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**FIGURE F-7**  
**ALL-CALL TELEPHONE SYSTEM**





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## **1.0 PURPOSE**

- (1) This section describes the DAEC Emergency Response Organization (ERO) emergency facilities, staffing and activation, and equipment required for support of emergency events.

## **2.0 REQUIREMENTS**

- (1) Emergency response facilities will be activated according to the notification and activation procedures described in the EPIPs. Personnel who are assigned to each facility either appear on call or notification lists used for notification purposes, or by procedure and training, will automatically report to a predesignated area upon declaration of the appropriate Emergency Classification. Each key emergency organization position is assigned a minimum of two qualified persons to ensure complete facility staffing. Whenever possible, three qualified persons will be assigned.
- (2) Support facilities and organizations will be activated as described regardless of the time of day or day of the week. However, it should be recognized that the normal plant staff is only at the site approximately 25% of the time. As a result, as many functions as possible will be assumed by the shift operating crew until support facilities are established and off-duty personnel arrive on site. Sufficient plant staff and corporate personnel will be trained and qualified to staff the appropriate facilities to ensure that they will be established and operational in a timely manner. The Emergency Response Organization is shown in Figure B-1 and also in the Emergency Telephone Book.

### **2.1 TECHNICAL SUPPORT CENTER (TSC)**

- (1) General Description
  - (a) The TSC is located in a facility adjacent to the DAEC Administration Building and is staffed by plant management and technical personnel to provide technical support for Control Room activities. The facility has the capability to transmit and record vital plant data in real time and provides access to as-built plant drawings and other records. Computerized dose projections can be performed from a computer terminal available in the TSC. The program (MIDAS) has real-time access to data from the plant effluent and meteorological monitoring systems. The Safety Parameter Display System (SPDS), which displays critical plant parameters monitored by the process computer, is available in the TSC. Additionally, plant parameters and status information of significance to the event can be transmitted using a VAX computer terminal as well as telephone and radio. Also available is the Emergency Response Data System (ERDS) which displays live-time plant data. The TSC is the main communications link between the plant and the Emergency Operations Facility (EOF). The location and floor plan are shown in Figures H-1 and H-2, respectively. The Control Room is

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designated as the alternate TSC. Communication links between the TSC, Operational Support Center (OSC), Control Room, EOF, and the Nuclear Regulatory Commission (NRC) are described in Section F.

(2) Activation Criteria

- (a) Declaration of an ALERT or higher emergency classification requires activation of the TSC. The Operations Shift Manager (OSM) will authorize initiation of the notification chain according to procedure. Members of the Emergency Response Organization assigned to the TSC will be notified by plant page, extension number, commercial phone, pager or automated telephone system. During off-hours, members of the Emergency Response Organization assigned to the TSC will be contacted by pager and/or commercial telephone. A call list is provided for this purpose. Upon receiving notification of an Emergency Classification which requires activation of the TSC, each individual contacted will immediately report to the TSC to begin activation tasks.
- (b) The TSC is activated at an ALERT, SITE AREA EMERGENCY or GENERAL EMERGENCY. Activation of the TSC for a NOTIFICATION OF UNUSUAL EVENT is at the discretion of the OSM or Emergency Coordinator.

(3) Staffing

- (a) The Emergency Coordinator exercises supervision and direction over the personnel assigned to the TSC. Personnel assigned to the TSC will include: selected members of the plant staff who are knowledgeable in specific functional areas at the DAEC, selected engineering personnel who can assist in providing engineering evaluations, and representatives from the NRC.

(4) Habitability

- (a) The TSC is designed and constructed to provide the shielding necessary to protect occupants from radiation effects from either the reactor core or the plume. An independent ventilation system can be placed in a recirculation mode of operation, enabling air to be continually filtered through both charcoal and HEPA filters. Radiation monitors are provided at the ventilation system intake and within the TSC proper. In the event of radiological releases, portable air sampling equipment is available that will enable periodic checks to be made of airborne radiological conditions.

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## 2.2 OPERATIONAL SUPPORT CENTER (OSC)

### (1) General Description

- (a) The OSC is located in a facility adjacent to the DAEC Administration Building and its floor plan is illustrated in Figure H-1. This center will be used to assemble and dispatch onsite and offsite radiation monitoring teams, and to coordinate in-plant survey efforts, rescue and emergency teams, and personnel who support Control Room emergency activities. This center will be in communication with the TSC and Control Room. Portable environmental sampling and monitoring equipment is stored near this facility to support radiation monitoring teams. This facility provides ready access to evacuation routes.

### (2) Activation Criteria

- (a) Activation of the OSC occurs in a similar fashion to the TSC. Upon declaration of an ALERT or higher emergency classification, the OSM will initiate the notification process. Individuals will either report to the OSC when notified, or will automatically report when an emergency classification is declared that requires OSC activation. Those assigned to the OSC will be notified by plant page, extension number, commercial phone, pager or automated telephone system. During off-hours, individuals assigned to the OSC will be contacted by pager, commercial telephone, or automated telephone system.
- (b) The OSC is activated at an ALERT, SITE AREA EMERGENCY, or GENERAL EMERGENCY is declared. Activation of the OSC for a NOTIFICATION OF UNUSUAL EVENT is at the discretion of the EC.

### (3) Staffing

- (a) The OSC Supervisor exercises overall supervision and direction for all emergency response personnel on site who are not members of the operations shift crew or assigned to other emergency response facilities. Onsite and offsite field radiological monitoring teams, rescue and repair teams, in-plant radiological survey assignments, and communicator assignments are established at the OSC using an Emergency Assignment Tag Board. This method is further described in the EPIPs.

### (4) Habitability

- (a) Sections I and K describe the systems and methods for monitoring radiological conditions in the OSC. Emergency kits at or near the OSC provide respiratory protection, protective clothing, decontamination capabilities, and portable sampling and monitoring devices. First-aid supplies are available from the first aid room. Decontamination is performed at the access control area. Radios, onsite and offsite telephones, and intraplant telephones are available in this center.

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### 2.3 EMERGENCY OPERATIONS FACILITY (EOF)

(1) General Description

- (a) The EOF depicted in Figure H-2 is a dedicated facility located on the 15th floor of the Alliant Tower in Cedar Rapids. This facility is operated by Duane Arnold for the continued evaluation and coordination of emergencies having actual or potential offsite consequences. The EOF staff disseminates information to federal, state, and local emergency response organizations and provides a centralized location for representatives from federal, state and local agencies.
- (b) This location has adequate square footage to support the ERO and the EOF. This provides adequate working space for approximately 40 people during normal conditions and 150 people during an emergency. It includes various offices and conference rooms, and provides ready access to the DAEC records, procedures, drawings, etc., that are normally used and maintained in this area.
- (c) The facility is equipped with suitable communications data transmission systems for use during normal and emergency conditions. These systems and equipment provide the following:
  - (i) Dedicated and prioritized communications interconnecting with the TSC, NRC, and local and state networks.
  - (ii) Terminals that can access and display vital plant parameters and radiological and meteorological data.
  - (iii) A fax machine system for transmitting information to the TSC and other offsite agencies, organizations, and companies, as required.

(2) Activation Criteria

- (a) Activation of the EOF will be accomplished for any event classified as a SITE AREA or GENERAL EMERGENCY. Activation and staffing of the EOF at an ALERT or lesser classification will be at the direction of the Emergency Response & Recovery Director (ER&RD). The Emergency Coordinator will notify the ER&RD of an emergency situation at DAEC. The ER&RD is responsible for ensuring that personnel are contacted and assigned to fill key EOF functions. Members of the Emergency Response Organization assigned to the EOF will be notified by pager, plant page, or commercial telephone during normal work hours, and by pager and/or commercial telephone, using either call lists or automated telephone system, during non-normal work hours. Key EOF personnel will be directed to report to the EOF when an ALERT is declared and may be placed on standby as directed by the ER&RD. The Emergency Telephone Book identifies each position to be contacted and response times.

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(3) Alternate EOF

- (a) If the Alliant Tower becomes uninhabitable the Alternate EOF will be activated. The Alternate EOF will be located at the Linn County Emergency Management Agency (EMA). Linn EMA is housed in the Kirkwood Community College Facilities and Security Building on the main campus of Kirkwood Community College in Cedar Rapids, IA.

(4) Staffing

- (a) Duane Arnold corporate managers familiar with operating, engineering, licensing, and public relations functions and activities are available to the EOF. Functions to be performed by these key personnel are described in Section B of this plan and in supporting implementing procedures.
- (b) The EOF will provide overall management of the emergency response (including coordination with federal, state and local officials) during Site Area and General Emergency classifications, and, if desired, during lower classifications of emergencies.

(5) Habitability

- (a) The EOF is located at a distance greater than 10 miles from the DAEC; therefore no shielding or specialized ventilation filtration systems are necessary.

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## 2.4 JOINT INFORMATION CENTER (JIC)

### (1) General Description

- (a) The JIC is located on the sixth and fifteenth floors of the Alliant Tower in Cedar Rapids with an auditorium and conference rooms. It has approximately 3,700 square feet and is capable of accommodating 200 news personnel for registration, inquiries, and mass briefings. The JIC functions as the single-point contact for disseminating information to the industry, news media, and public officials. The JIC Manager will use the JIC as his/her headquarters. He/she will ensure that the center is provided with adequate equipment and materials including those listed below:
- (i) A large briefing area with a public address system
  - (ii) A working area for the press
  - (iii) Federal, state, and local government agency work area
  - (iv) Kitchenette and restrooms
  - (v) DAEC media guide and visual aids
- (b) A more detailed description of the JIC, specific equipment capabilities, and media material is provided in Figures H-7 and H-8, "JIC 6th and 15th Floor Plans, typical".
- (c) Should the Cedar Rapids metropolitan area require evacuation, facilities on the main campus of Kirkwood Community College can be used for media briefings and news conferences. JIC spokespersons representing DAEC, Linn and Benton Counties, the State of Iowa, and any Federal agencies, with appropriate support staff will relocate to the College to provide the media with timely and accurate information.

### (2) Activation Criteria

- (a) Activation of the JIC will be accomplished for any event classified as a SITE AREA or GENERAL EMERGENCY. Activation and staffing of the JIC at an ALERT or lesser classification will be at the direction of the JIC Manager. The ER&RD will notify the JIC Manager of an emergency situation at DAEC. The JIC Manager is responsible for ensuring that personnel are contacted and assigned to fill key JIC functions. Members of the Emergency Response Organization assigned to the JIC will be notified by pager, plant page, or commercial telephone during normal work hours, and by pager and/or commercial telephone, using either call lists or automated telephone system, during non-normal work hours. Key JIC personnel will be directed to report to the JIC when an ALERT is declared and may be placed on standby as directed by the JIC Manager. The Emergency Telephone Book identifies each position to be contacted and response times.

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## 2.5 OFFSITE RELOCATION AND ASSEMBLY AREA (ORAA)

### (1) General Description

- (a) The Offsite Relocation and Assembly Area (ORAA) is located in Palo. The directions to the facility are described in Figure H-4. This facility will be staffed by the ORAA Supervisor, security force members, and health physics technicians (or HP trained equivalents). This facility has the capability of providing space in the event of a site evacuation of non-essential personnel from the DAEC. The ORAA provides full decontamination capabilities, and can also function as a staging area to support recovery and re-entry efforts at the DAEC.

### (2) Activation Criteria

- (a) Activation and staffing of the ORAA will be accomplished for any event classified as a SITE AREA or GENERAL EMERGENCY. Activation and staffing of the ORAA at an ALERT level will be based upon whether or not a site evacuation has been initiated at the direction of the Emergency Coordinator. The OSC Supervisor, when notified that an evacuation from the site is being conducted, shall contact the ORAA Supervisor and inform him that the ORAA is to be activated. The ORAA Supervisor will then coordinate with the OSC Supervisor to assign three Health Physics technicians (or HP trained equivalents) to assist in the activation of the ORAA.

### (3) Staffing

- (a) The ORAA Supervisor exercises supervision and direction over the personnel assigned to the ORAA. Personnel assigned to the ORAA include selected security force members and health physics trained personnel for monitoring and decontamination purposes. The ORAA Supervisor will coordinate with the HP Supervisor if more personnel are needed.

### (4) Habitability

- (a) The ORAA does not provide shielding necessary to protect occupants from the plume. If the ORAA, located in Palo, Iowa, is not habitable due to plume effect, the alternate reassembly area will be the Benton County Emergency Worker Monitoring and Decontamination Station located at 701 East A Street in Vinton. It may be necessary for the Emergency Coordinator to select another location based upon input from the Site Radiation Protection Coordinator due to radiological release and meteorological conditions.

## 2.6 ALTERNATIVE FACILITIES

- (1) If the site is under threat or experiencing a hostile action, the onsite ERO members may be directed to Alternative Facilities. These facilities function as a staging area for augmentation of emergency response staff. Collectively, these facilities have the following characteristics: the capability for communication with the emergency operations facility, control room, and plant security; the capability to perform offsite notifications; and the capability for engineering assessment activities, including damage control team planning and preparation, for use when onsite emergency facilities cannot be safely accessed during hostile action.

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[Reference: 10CFR50 Appendix E Section IV.E.8.d]

## **2.7 STATE HYGIENIC LABORATORY (SHL)**

### **(1) General Description**

- (a) The SHL is located at 2490 Crosspark Road, Coralville, Iowa 52241. This facility provides for the analysis of contaminated or potentially contaminated samples such as water, vegetation, and soil.

### **(2) Activation Criteria**

- (a) The SHL is designated for activation at the discretion of the representative for the Iowa Homeland Security & Emergency Management Division (HSEMD).

### **(3) Staffing**

- (a) The SHL is staffed per the direction of the Iowa Homeland Security & Emergency Management Division (HSEMD).

### **(4) Habitability**

- (a) The SHL is located beyond the 10 mile Emergency Planning Zone (EPZ) from the DAEC. Habitability determinations will be conducted on an as needed basis when potentially contaminated samples or personnel are delivered to the SHL.

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## 2.8 ONSITE MONITORING SYSTEMS

- (1) Meteorological Monitors
  - (a) Wind speed and direction
  - (b) Temperature
- (2) Radiological Monitoring Systems
  - (a) Area Radiation Monitoring System
  - (b) Process Radiation Monitoring System
    - (i) Main Steamline Radiation Monitoring System
    - (ii) Offgas Radiation Monitoring System
      - (a) Pre-treatment Offgas Monitor and Sampler
      - (b) Post-treatment Offgas Monitor and Sampler
    - (iii) Carbon Bed Vault Radiation Monitoring System
    - (iv) Offgas Vent Pipe (Stack) Radiation Monitoring System
    - (v) Refueling Pool Exhaust Radiation Monitoring System
    - (vi) Reactor Bldg. Main Exhaust Radiation Monitoring System
    - (vii) Control Building Air Intake Radiation Monitoring System
    - (viii) Liquid Process Radiation Monitoring System
      - (a) Radwaste Effluent
      - (b) Service Water Effluent
      - (c) Reactor Bldg Closed Cooling Water
      - (d) RHR and Emergency Service Water Effluent
      - (e) RHR and Emergency Service Water Rupture Disc Effluent
    - (ix) KAMAN Extended Range Effluent Monitoring System
      - (a) Offgas Vent Pipe
      - (b) Reactor Building Stacks
      - (c) Turbine Building Vents
- (c) Portable dose rate meters

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- (d) Counting Laboratory Equipment
  - (i) Gamma Spectroscopy
  - (ii) Proportional Counter
  - (iii) Liquid Scintillation Counter
- (e) Whole Body Counter
- (3) Process Monitoring Systems
  - (a) NSSS Instrumentation
    - (i) Rx Vessel Level
    - (ii) Rx Pressure
    - (iii) Rx Temperature
    - (iv) Nuclear Instrumentation
    - (v) Associated Alarms, Annunciators
  - (b) Containment Instrumentation
    - (i) Drywell Temperature
    - (ii) Drywell Pressure
    - (iii) Containment Level
    - (iv) Torus Temperature
    - (v) Torus Pressure
    - (vi) Drywell Sump Pump Timers
    - (vii) Drywell to Torus DP
    - (viii) Torus to Rx Building DP
  - (c) ECCS Instrumentation
    - (i) ECCS Pump Operation
    - (ii) ECCS System Flow Indicators
    - (iii) Isolation Valve Status
    - (iv) HPCI/RCIC Turbine Speed/Minimum Flow
    - (v) Emergency Diesel Generator Operation
    - (vi) SBLC System Operation
    - (vii) Associated Alarms, Annunciators

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(d) System Instrumentation

- (i) SGBT Operation and Flow
- (ii) Standby Filter Unit Operation and Flow
- (iii) Off-Gas System Operation and Flow
- (iv) Rx Building Ventilation Exhaust
- (v) Turbine Building Ventilation Exhaust
- (vi) Feedwater Flow
- (vii) Main Steam Flow
- (viii) Generator Load
- (ix) Valve Status Indicator Lights
- (x) Stack Fan Flow
- (xi) Associated Alarms, Annunciators

(e) Electrical Instrumentation

- (i) RPS Failure Indication
- (ii) Battery Voltage
- (iii) Vital Bus Voltmeter
- (iv) Transformer Output
- (v) Breaker Position Indicators
- (vi) Sub-Station Breaker Positions
- (vii) Associated Alarms, Annunciators

(4) Fire Monitoring Systems

- (a) Smoke (ionization) Detectors
- (b) Rate-of-rise heat Detectors
- (c) Heat Detectors
- (d) Associated Alarms, Annunciators

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## 2.9 METEOROLOGICAL INSTRUMENTATION AND PROCEDURES

- (1) The DAEC Meteorological Instrumentation is used to acquire data for both on-site and off-site monitoring of weather conditions.
- (2) A complete description of the meteorology program is contained in the Updated Final Safety Analysis Report (UFSAR). A capsulated description of the system is given here.
  - (a) The meteorological tower is located 1700 feet south-southeast of the Reactor Building. Both primary and backup instrumentation is provided to measure wind direction, wind speed, and ambient air temperature at 33 feet and 156 feet above the base of the tower. In addition, dewpoint is measured at the 33-foot level and precipitation is measured at the base of the tower. The accuracy's and ranges associated with this instrumentation are discussed in the UFSAR. Calibration of the instruments is performed semiannually. The onsite meteorological measurement program is documented in the UFSAR and the associated Onsite Meteorological Data Supplement.
  - (b) The data gathered by the instrumentation is provided as instantaneous values at 10-second intervals to the Safety Parameter Display System (SPDS). The SPDS screens the data and selects either the primary or the backup instrumentation, as appropriate, under the existing meteorological conditions. The instantaneous values are then processed into one-minute averages and transmitted, along with radiological data, to the atmospheric dispersion and dose assessment model. This allows near real-time predictions of the atmospheric effluent transport and diffusion as well as remote interrogation of the atmospheric measurements and predictions by appropriate organizations. When the Emergency Response Data System (ERDS) link is activated, this data is also picked up and transmitted to the NRC ERDS.
  - (c) The data gathered by the instrumentation is also provided to a hard copy recorder in the Control Room in the form of 30-minute averages as a backup to the data archived by the dose assessment model. For an expanded description of the effluent monitoring system and the dose assessment model, see DAEC Plan "I" section 2.2 "Accident Assessment Capabilities and Resources".

## 2.10 SEISMIC AND HYDROLOGICAL INSTRUMENTATION

- (1) Seismic instrumentation is installed at several locations to detect seismic disturbances. Accelerograph sensors are located in the basement of the Reactor Building, the Refueling Floor, the Intake Structure, Pump House, Recirculation System Piping, Reactor Vessel, and at various other Class I structures. An accelerograph is also installed at a "free field" location to measure soil structure interactions. The accelerograph sensors feed indicating lights and alarms located in the Control Room. The seismic indicators alert operators when predetermined Operating Basis Earthquake (OBE) and Design Basis Earthquake (DBE) values are exceeded.
- (2) The intake structure for plant cooling water employs a level sensing system for Cedar Rapids River level. A level recorder indicates increases or decreases in river level. Additionally, periodic checks of the total flow of the Cedar Rapids River are made at a gauge station in Cedar Rapids.

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### **2.11 CONTROL OF EMERGENCY EQUIPMENT/INSTRUMENTS**

- (1) The operational readiness of emergency equipment and supplies is ensured through a program of routine inventory, calibration, test, and maintenance. Once during each quarter, all emergency kits, emergency equipment, and supplies are inventoried. This inventory includes verification that procedures contained in the kits are the latest revision. Additionally, all portable instruments are verified to have been tested and calibrated as prescribed by DAEC procedures. The general condition of supplies such as batteries, respirators, and liquid containers are inspected for signs of leakage or deterioration.

### **2.12 COMMUNICATION CHECKS**

- (1) The following communication checks will be performed at the specified frequencies:
  - (a) Local and state governments - monthly
  - (b) NRC Headquarters Operations Center - monthly
  - (c) Emergency Response Data System - quarterly
  - (d) Local and state Emergency Operations Centers - annually
- (2) These communication checks will be documented as specified in the EIPs and in Emergency Preparedness Department Procedures.

### **2.13 EMERGENCY KITS**

- (1) DAEC Emergency Plan Appendix 4 identifies the procedures which contain the location and type of emergency kits; i.e., protective equipment, communications equipment, radiological monitoring equipment, and emergency supplies. The Emergency Planning Department procedures establish the inventory quantities of the items listed in the kits.

### **2.14 RECEIPT AND ANALYSIS OF FIELD MONITORING DATA**

- (1) Field monitoring data will be transmitted to the EOF for review and analysis. Prior to the EOF being operational, data will be transmitted to the TSC for review and analysis.

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**TABLE H-1**

**RADIOLOGICAL MONITORING SAMPLING STATION LOCATIONS**

Refer to ODAM Table 5-1

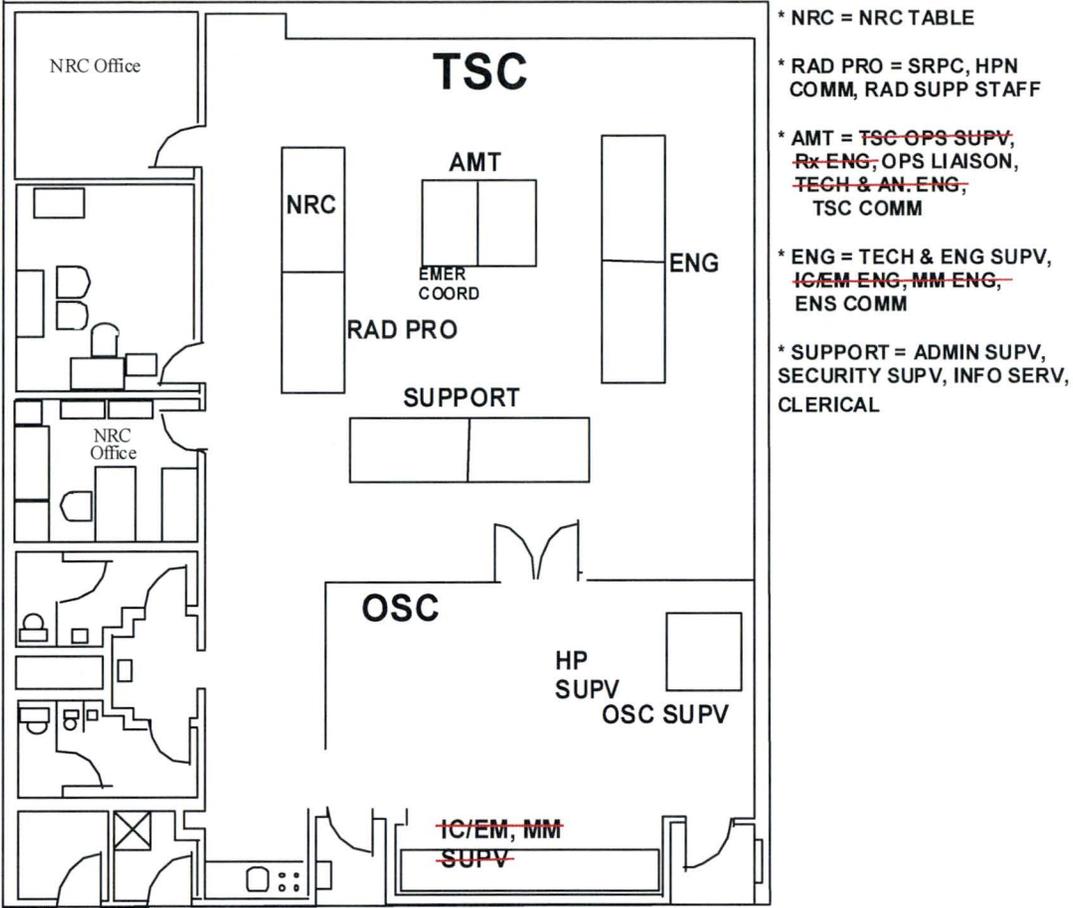
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**TABLE H-2**  
**RADIOLOGICAL MONITORING LOCATIONS**

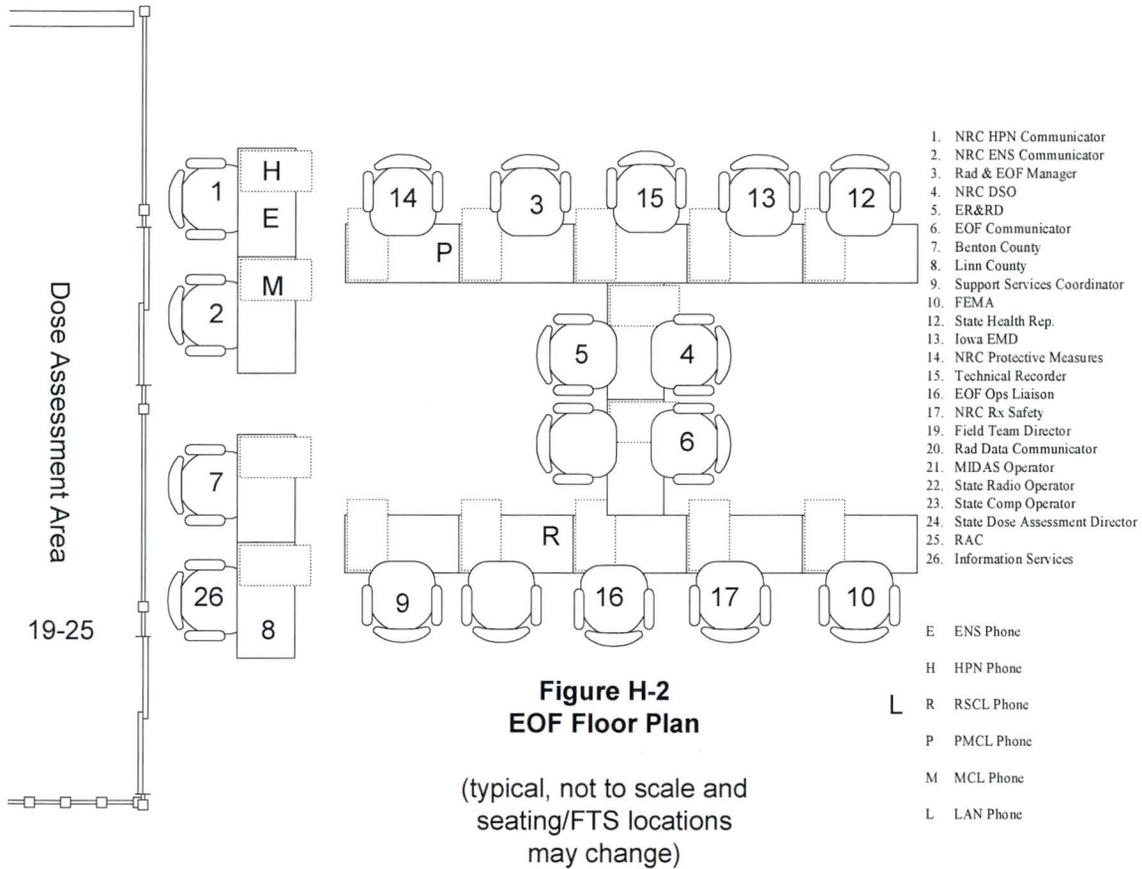
Refer to ODAM Table 5-1

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**FIGURE H-1**  
**TSC/OSC FLOOR PLAN (Typical)**



**FIGURE H-2**  
**EOF FLOOR PLAN (Typical)**

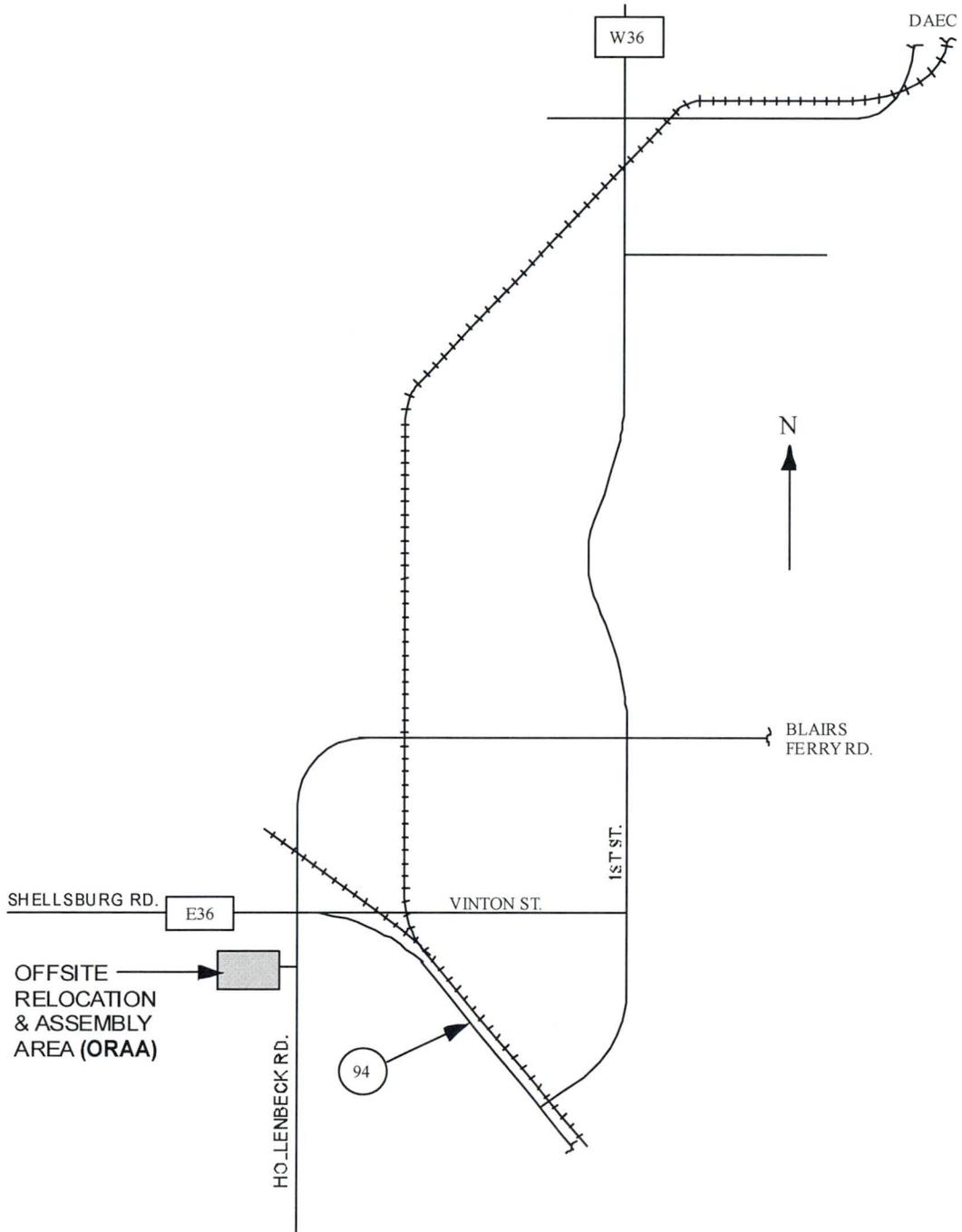


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**FIGURE H-3 (DELETED)**

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**FIGURE H-4**  
**DIRECTIONS TO ORAA**  
**(2800 Hollenbeck Road, Palo, IA 52324)**



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**FIGURE H-5 (DELETED)**

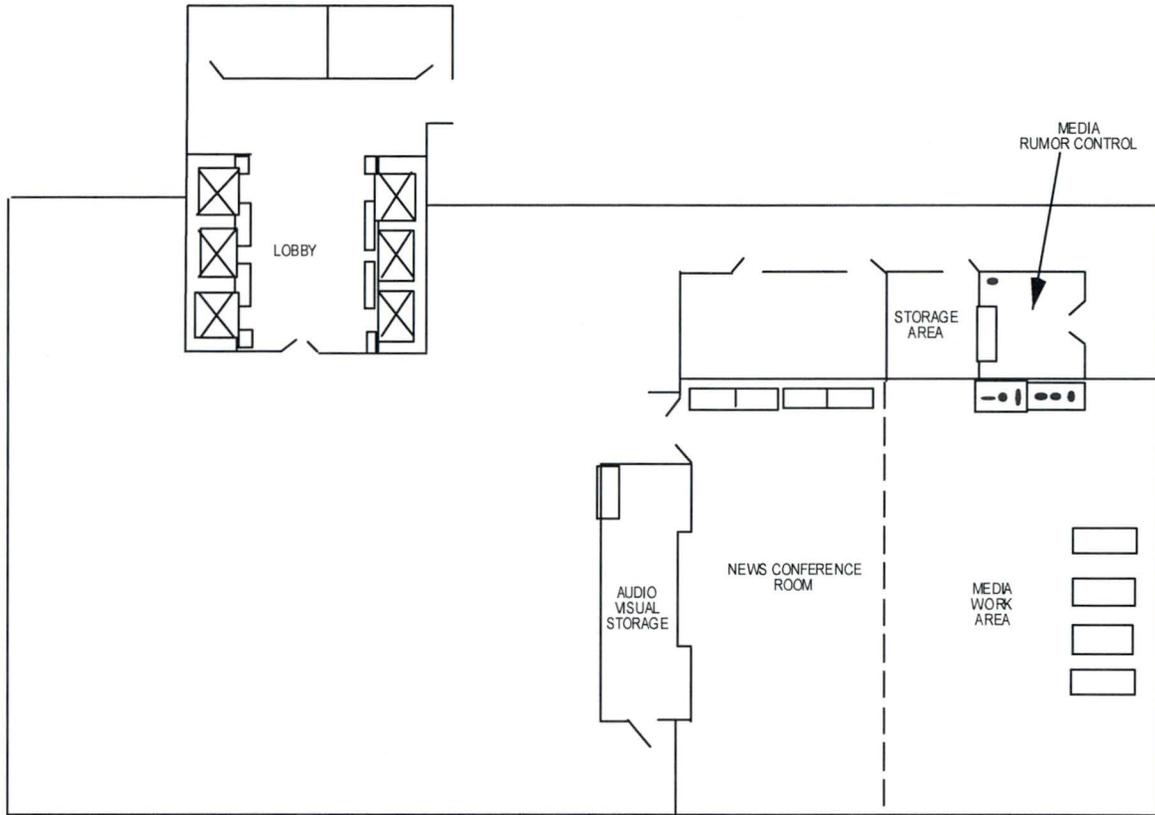
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**FIGURE H-6 (DELETED)**

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**FIGURE H-7**

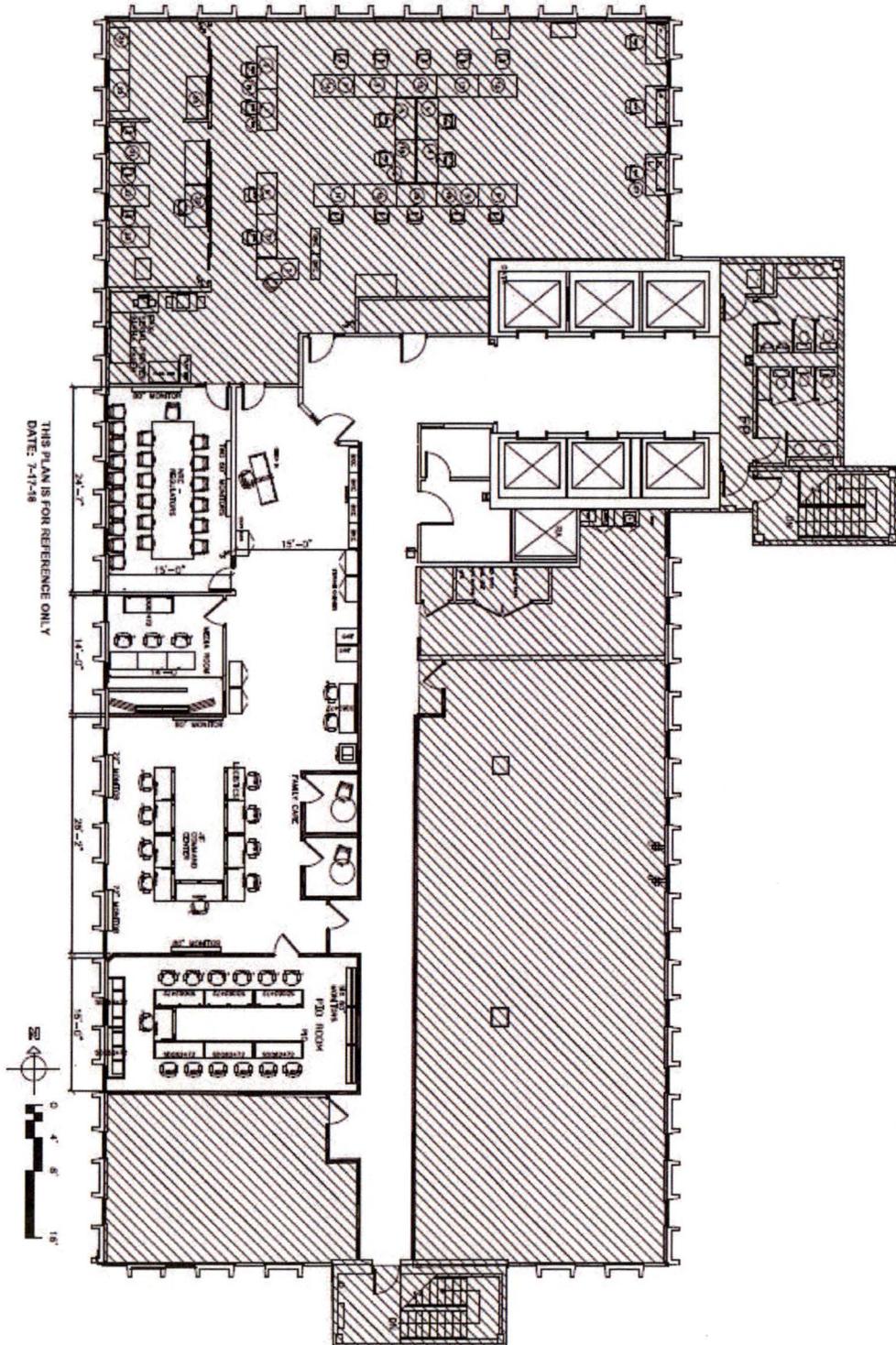
**JIC 6TH FLOOR PLAN (Typical)**



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**FIGURE H-8**

**JIC 15TH FLOOR PLAN (Typical)**



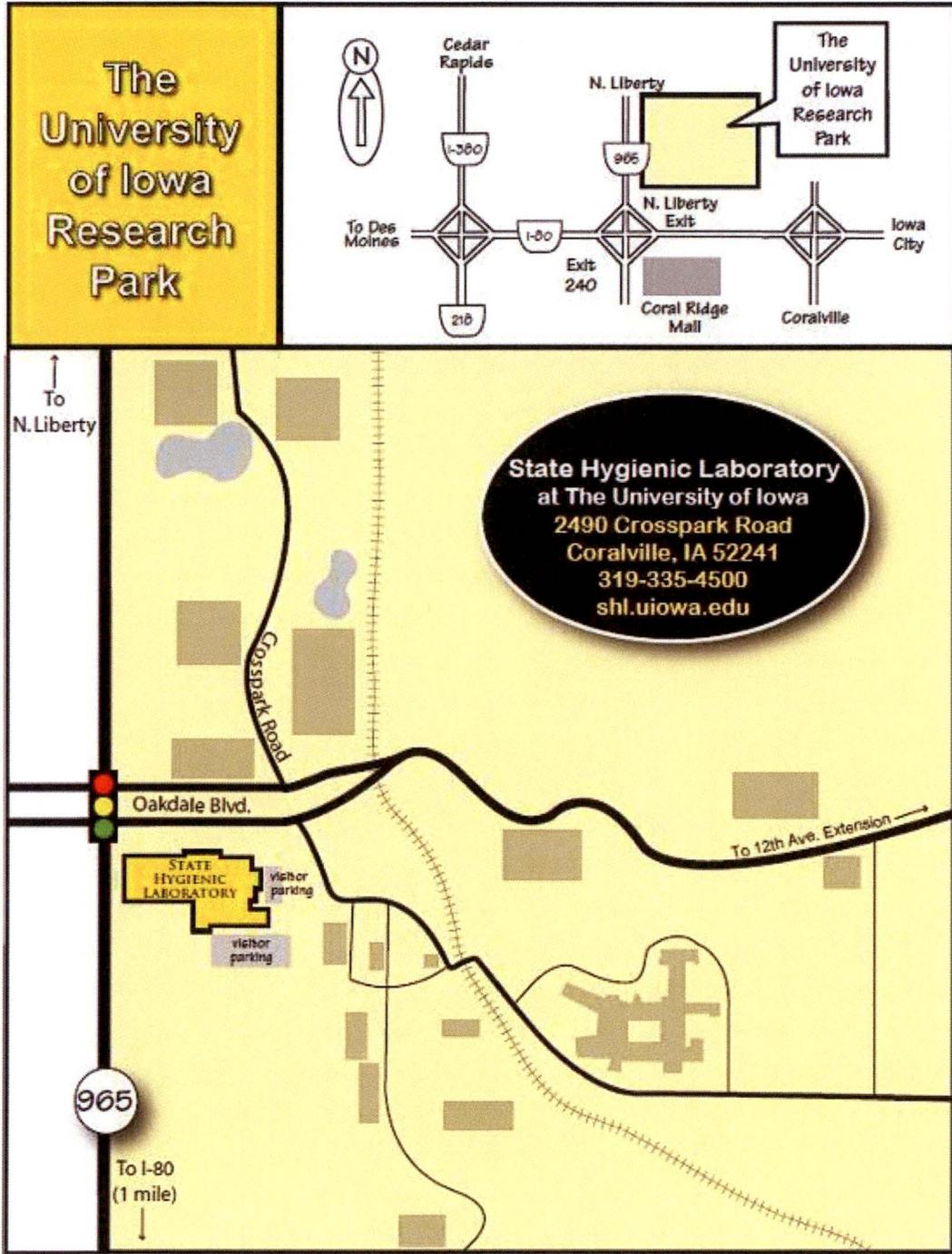
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**FIGURE H-9 (DELETED)**

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**FIGURE H-10**

**DIRECTIONS TO THE STATE HYGIENIC LAB (SHL)**





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## **1.0 PURPOSE**

- (1) This section describes the protective actions to be taken for emergency workers and the public based upon the event classification and resulting assessment of plant status and radiological conditions. Guidelines for the choice of protective actions to be implemented are presented, as well as the methods to be used to notify the population at risk of emergency conditions.

## **2.0 REQUIREMENTS**

### **2.1 NOTIFICATION OF ONSITE PERSONNEL**

- (1) Personnel on site within the Protected Area boundary, and personnel on site outside the Protected Area located in the Training Center and the Plant Support Center will be notified of an emergency condition by a distinctive tone-alarm over the public address system, followed by an announcement over the plant page system.
- (2) Security force personnel will be dispatched, as appropriate, to warn any individuals who may be on Duane Arnold property in the vicinity of the plant.

### **2.2 SITE EVACUATION**

- (1) Non-essential personnel will be evacuated from the DAEC to an offsite reassembly area during a SITE AREA or GENERAL EMERGENCY. Evacuation from the site will be by the routes shown in Figure J-1, using personal transportation. The south route will normally be used, unless radiological conditions dictate use of the north route. Security personnel will provide traffic control on site. The detailed provisions for evacuation, relocation, radiological monitoring and decontamination of site personnel are provided in the EIPs.
- (2) Evacuated personnel will proceed to the Palo Community Center, located in Palo, Iowa, and reassemble for an accountability check and personnel radiological monitoring, if not already accomplished at the DAEC. If the Palo Community Center is not habitable due to plume effects, the alternate reassembly area will be the Benton County Emergency Worker Monitoring and Decontamination Station located at 701 East A Street in Vinton, or at the Emergency Coordinator's discretion.

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**2.3 CONTAMINATION CONTROL OF SITE EVACUEES**

- (1) Security force personnel will ensure that any individuals who may be on company property but outside of the fenced area are advised of the event and escorted off the property. Access will be permitted only to those individuals who are required at the site. If radiological releases have occurred or are in progress, individuals escorted offsite will be surveyed for any radiological contamination prior to being released from company property. In the event that evidence of contamination is found or suspected, the individual will be decontaminated onsite or taken to the Offsite Relocation and Assembly Area (ORAA) or Mercy Medical Center or University of Iowa Hospitals and Clinics for subsequent decontamination and release.
- (2) Where possible, plant employees will be decontaminated in onsite facilities. A full capability exists to conduct decontamination at the Palo Community Center.

**2.4 ACCOUNTABILITY OF ONSITE PERSONNEL**

- (1) For all events that result in activation of the Emergency Response Organization except those classified as NOTIFICATION OF UNUSUAL EVENT, personnel onsite will proceed to their pre-assigned assembly point. In those situations where the number of personnel at the site is significantly in excess of the normal plant staff, information will be disseminated to those additional personnel identifying alternate assembly and accountability locations.
- (2) An accountability check for all personnel who are within the Protected Area will be conducted. The methods used will enable accounting for all individuals onsite at the time of the emergency, ascertain the names of missing individuals within approximately thirty minutes of the start of an emergency, and continuously account for all onsite individuals thereafter.

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## 2.5 RADIOLOGICAL PROTECTION OF ONSITE PERSONNEL

- (1) Protective measures associated with the use of protective clothing and the use of respiratory protection equipment shall be taken in accordance with existing radiation protection requirements.
- (2) Respiratory protection devices may be required in any situation arising from plant operations where airborne radiological contamination exists. In such cases, the air will be monitored and the need for and type of protective devices will be specified according to the concentration and type of airborne contaminants present. This decision will be made to optimize the total effective dose equivalent. Periodic air samples are routinely taken in selected areas of operations or work activity during normal operations. Air samples will be taken in the OSC, Control Room and TSC, as appropriate, to ensure continued habitability of those areas and to alert the Emergency Coordinator to any changes in the airborne status.
- (3) Protective clothing and respiratory protection equipment are maintained at several locations within the plant. Personnel in the OSC will be dispatched to distribute additional equipment as necessary to the Control Room, TSC, or other plant areas where personnel may be stationed. In the event that sufficient equipment is not available, personnel will be relocated to plant areas where contamination hazards do not exist.
- (4) Where the potential exists for significant exposure to radioiodine, an initial dosage of potassium iodide will be administered. A sufficient quantity of potassium iodide will be kept onsite for this purpose. The use of potassium iodide will be in accordance with EIPs.

## 2.6 ONSITE PROTECTIVE ACTIONS

- (1) A range of protective actions to protect onsite personnel during a hostile action have been developed to ensure the continued ability to safely shut down the reactor and perform the functions of the emergency plan.

[Reference: 10CFR50 Appendix E Section IV.I]

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## 2.7 OFFSITE PROTECTIVE ACTION RECOMMENDATIONS

- (1) Upon identification and classification of the event, notifications will be made as delineated in Section E. Decisions with respect to sheltering or evacuation of the population at risk, as well as the means of notification, are as prescribed in the Linn County and Benton County Radiological Emergency Response Plans and Emergency Plan Implementing Procedures. Recommendations for protective actions for the public are based upon ensuring that personnel exposures are maintained at or below those identified in the EPA Protective Action Guides, as described in Table K-1.
- ~~(2) In addition to specific identification and classification of an event, other plant conditions may exist that make releases of large amounts of radioactivity in a short time possible. In this case, precautionary protective actions will be recommended and communicated to the appropriate offsite agencies. The plant conditions which could combine to create the potential for releases include the following:~~
- ~~• Core melt event sequences where releases from containment are not yet taking place, and large amounts of fission products are not yet in the containment atmosphere.~~
  - ~~• Core melt event sequences where large amounts of fission products are in the containment atmosphere.~~
  - ~~• Core melt event sequences where releases from containment are not yet taking place, but containment failure is likely with large amounts of fission products in addition to noble gases in the containment atmosphere.~~
- ~~(3)~~(2) Communication systems are available to ensure that the population at risk is notified of protective measures to be taken. These are discussed in Section E.
- ~~(4)~~(3) Protective Action Recommendations have been developed using the guidance of NUREG-0654, Supplement 3 which provides an acceptable method to comply with 10 CFR 50, Appendix E, Section IV, paragraph 3 in the use of evacuation time estimates in the formulation of protective action recommendations (PARs) for the plume exposure emergency planning zone, and provides guidance for the provisions of 10 CFR 50.47(b)(10) in the development of a range of PARs.
- ~~(5)~~(4) NUREG-0654, Supplement 3 also provides guidance to support the information in NUREG-0654/FEMA-REP-1 that the U.S. Nuclear Regulatory Commission finds to be an acceptable method of meeting the requirements in 10 CFR 50.47(b)(7) for the development of a public information program.
- ~~(6)~~(5) The Protective Action Recommendations have been coordinated with the responsible Offsite Responsible Organizations.

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## 2.8 PLUME EPZ PROTECTIVE ACTIONS

- (1) Offsite protective actions, including sheltering, evacuation and contamination control, will be taken in accordance with the action criteria established in the EPA Protective Action Guides (PAGs) described in Table K-1. The responsibilities associated with implementation of such protective actions are specified in the Linn County and Benton County Radiological Emergency Response Plans. In addition to Table K-1, the following factors will determine the basis for choosing between alternate recommended protective actions:
- Potential for release based on plant conditions
  - Type of release, (i.e., constant or puff, elevated or ground), filtered or unfiltered
  - Length of release
  - Time required for the plume to reach the population at risk
  - Prevailing meteorological conditions
  - Evacuation time estimates for general and special population distributions are found in Appendix 3 (Evacuation - Time Estimates)
  - Radiological monitoring and environmental sampling results
  - Representative Shielding Factors for Gamma Cloud Sources (Table J-2)
  - Alternate local sheltering facilities
- (2) The Linn County and Benton County Radiological Emergency Response Plans and the State of Iowa Radiological Emergency Response Plan include maps identifying evacuation routes, evacuation subareas, and relocation centers in host counties.

## 2.9 PLUME EPZ EVACUATION TIME ESTIMATES

- (1) The DAEC Evacuation Time Estimate for Linn and Benton Counties identifies population distributions, evacuation time estimates, and evacuation routes and is included as Appendix 3. EPZ evacuation routes are as delineated in the Linn County and Benton County Radiological Emergency Response Plans and the State of Iowa Radiological Emergency Response Plan. The permanent population within the DAEC EPZ subareas and within the plume exposure EPZ of DAEC is reflected in Appendix 3. The county plans contain the EPZ evacuation plans.

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## 2.10 INGESTION PATHWAY PROTECTIVE ACTIONS

- (1) Protective action recommendations provided to offsite authorities with regards to the ingestion exposure pathway (50 mile EPZ) will be based upon a number of factors including:
- Type of release
  - Release source
  - Time frame (or accident phase)
  - The results of environmental monitoring and sampling efforts undertaken
- (2) Initial recommendations provided will typically be conservative and based primarily upon projected impacts as opposed to analytical results. Table J-1 provides a summary of the recommended protective actions that may be appropriate for an event at the DAEC. As is evident, these recommendations generally entail restriction of food stuffs and surface drinking water and placing milk animals on stored (non-contaminated) feed. The implementation of protective response options for the ingestion exposure pathway is the responsibility of the State of Iowa and is described in the Iowa Radiological Emergency Response Plan.

## **3.0 ATTACHMENTS**

- (1) TABLE J-1, "SUMMARY OF POSSIBLE OFF-SITE PROTECTIVE ACTIONS TO BE RECOMMENDED OR IMPLEMENTED DURING AN EMERGENCY"
- (2) TABLE J-2, "REPRESENTATIVE SHIELDING FACTORS FROM GAMMA CLOUD SOURCE"
- (3) FIGURE J-1, "SITE EVACUATION ROUTES"
- (4) FIGURE J-2, "DAEC EPZ EVACUATION ROUTES"

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**TABLE J-1  
SUMMARY OF POSSIBLE OFFSITE PROTECTIVE ACTIONS TO BE RECOMMENDED OR  
IMPLEMENTED DURING AN EMERGENCY†**

ACCIDENT PHASE	EXPOSURE PATHWAY	EXAMPLES OF ACTION TO BE RECOMMENDED
<sup>1</sup> EARLY PHASE (0.5 TO 30 hours)*	Inhalation of gases, radioiodines, or particulates	Evacuation, shelter, access control, respiratory protection, prophylaxis (thyroid protection)
	Direct whole body exposure	Evacuation, shelter, access control
<sup>2</sup> INTERMEDIATE PHASE  (30 hours to 30 days)*	Ingestion of milk	Take cows off pasture, prevent cows from drinking surface water, discard contaminated milk or divert it to stored products such as cheese
	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
	Whole body exposure and inhalation	Relocation, decontamination, access control
<sup>3</sup> LATE 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 of material or inhalation of resuspended material	Relocation, access control, decontamination, fixing of contamination, deep plowing

<sup>1</sup> Emergency Phase - Time period of major release and subsequent plume exposure.

<sup>2</sup> Intermediate Phase - Time period of moderate continuous releases with plume exposure and contamination of the environment

<sup>3</sup> Long Term Phase - Recovery period.

\* "Typical" Post-Accident time periods.

† Reference: USEPA "Manual of Protective Action Guides and Protective Actions for Nuclear Incidents," (EPA 400-R-92-001) dated October 1991 with 2nd printing May 1992.

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**TABLE J-2  
REPRESENTATIVE SHIELDING FACTORS FROM GAMMA CLOUD SOURCE\***

Structure of Location	Shielding Factor (a)	Representative Range
Outside	1.0	--
Vehicles	1.0	--
Wood-frame house (b) (no basement)	0.9	--
Basement of wood house	0.6	0.1 to 0.7 (c)
Masonry house (no basement)	0.6	0.4 to 0.7 (c)
Basement of masonry house	0.4	0.1 to 0.5 (c)
Large office or industrial building	0.2	0.1 to 0.3 (c, d)

- (a) The ratio of the interior dose to the exterior dose
- (b) A wood frame house with brick or stone veneer is approximately equivalent to a masonry house for shielding purposes.
- (c) This range is due mainly to different wall materials and different geometrics.
- (d) The reduction factor depends on where the persons are located within the building (e.g., the basement or an inside room).

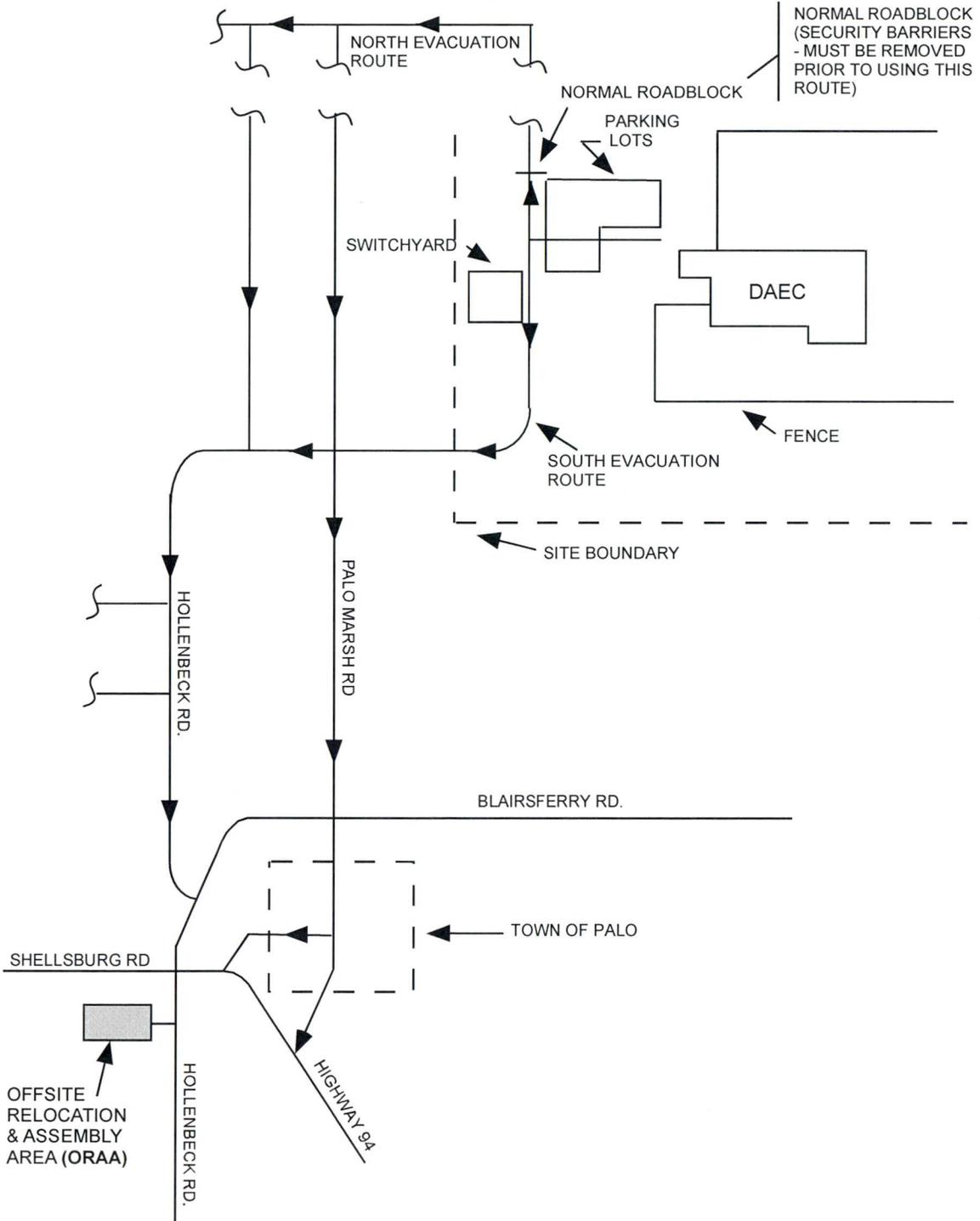
**NOTE:**

- (1) Consideration is limited to gamma radiation since beta and alpha particles cannot penetrate the walls of structures.

\* Manual of Protective Action Guides and Protective Actions for Nuclear Incidents (EPA 400-R-92-001) dated October 1991 with 2nd printing May 1992.

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**FIGURE J-1  
SITE EVACUATION ROUTES**





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**1.0 PURPOSE**

- (1) This section describes the measures to be taken to control radiological exposure to emergency workers and the affected offsite population.

**2.0 REQUIREMENTS**

**2.1 EXPOSURE GUIDELINES**

- (1) Conditions may arise wherein consideration will be given to authorizing radiological exposures beyond the normal occupational limit to emergency personnel. These decisions will be based upon the following categories of risk: Emergency Workers.
- (2) To provide the flexibility that may be necessary for emergencies, Duane Arnold will not consider any occupational dose received during the year and will apply the EPA dose limits stipulated in Table 2.2 of EPA 400-R-92-001 (Manual of Protective Action Guides and Protective Actions for Nuclear Incidents) dated October 1991 with 2nd printing May 1992. However, when determining if a worker may respond to an emergency, Duane Arnold will consider prior overexposures and/or planned special exposures when establishing a worker's available emergency dose. Time permitting; NRC Reg Guide 8.35 (Planned Special Exposures) guidelines will be used.
- (3) When emergency action is necessary such that emergency personnel would receive radiological exposures beyond the normal occupational limits, the guidelines as outlined in Table K-1 apply.
- (4) For emergency response actions which might include inhalation of gases or particulates, the emergency dose limit Committed Dose Equivalent to the thyroid is ten times the listed limit in Table K-1. Although respirators and stable iodine should be used where effective to control doses to emergency team workers, Committed Dose Equivalent (thyroid dose) may not be a limiting factor for lifesaving missions.

**2.2 ONSITE RADIATION PROTECTION PROGRAM**

- (1) Protective measures associated with the use of protective clothing and the use of respiratory protection equipment are discussed in Section J.

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## 2.3 EXPOSURE CONTROL

### (1) Exposure Monitoring

- (a) Duane Arnold will provide exposure monitoring services to determine the doses received by emergency personnel. A health physics technician will supplement each shift operating crew to provide health physics coverage during backshifts, weekends, and holidays when the normal plant staff is not present. In addition, the shift Radwaste operator is available to assist the health physics technician at all times. Added health physics coverage will be provided by trained personnel assigned to the Radiation Protection Department on an as needed basis. ~~The An~~ on-shift ~~chemist~~ **Non-Certified Operator** has been designated to run the MIDAS Dose Projection System **until relieved**.
- (b) Electronic or self reading dosimeters and permanent record (thermoluminescent) dosimeters will be issued to onsite emergency personnel including those from Duane Arnold, NRC, state, county, and local agencies.

### (2) Exposure Records

- (a) Standard radiation protection practices will be followed in preparing and maintaining exposure records. These procedures ensure that dosimeters are read at appropriate frequencies. Separate records will be maintained for Duane Arnold, NRC, local, state, contractor and consultant personnel who arrive at the site. The Site Radiation Protection Coordinator will be responsible for ensuring that personnel are informed of permissible exposure limits and work time within a controlled zone. Following deactivation, each agency participating in onsite recovery activities will be sent the exposure records for its personnel.

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## **2.4 CONTAMINATION CONTROL MEASURES**

- (1) Decontamination Action Levels
  - (a) Standard radiation protection requirements associated with decontamination of areas, equipment, and tools, etc. will be followed. Any modifications to these standards will be as authorized by the Site Radiation Protection Coordinator.
- (2) Decontamination Facilities
  - (a) Decontamination facilities are located at the Access Control Point in the Administration Building. These facilities provide for the decontamination of personnel, supplies, and equipment and for waste disposal. The Low Level Radwaste facility can also provide for the decontamination of supplies, equipment, and for waste disposal.
- (3) Area Access Control
  - (a) Area access will be established and controlled in accordance with standard practices.
- (4) Water and Food Supplies
  - (a) Water and food supplies at the site shall be verified as acceptable for ingestion in those situations where the probability of contamination of food and water exists.
- (5) Area Return to Normal Use
  - (a) The Site Radiation Protection Coordinator will determine when evacuated areas may be returned to normal use. Radiological monitoring of those areas will be accomplished in accordance with standard radiation protection practices.

## **2.5 DECONTAMINATION OF RELOCATED PERSONNEL**

- (1) Personnel will be decontaminated when possible in the onsite decontamination center prior to relocation. Personnel will be taken to the Offsite Relocation and Assembly Area (ORAA) (located at 2800 Hollenbeck Road in Palo) as prescribed in Emergency Plan Implementing Procedures when onsite decontamination is not possible. All personnel will be decontaminated prior to release or reassignment to emergency duties. Necessary equipment and supplies will be available for use at the ORAA, including provisions for extra clothing, decontamination methods suitable for the type of contamination expected, and radioiodine contamination of the skin. Personnel who cannot be decontaminated will be taken to Mercy Medical Center or University of Iowa Hospitals and Clinics for further evaluation.

## **3.0 ATTACHMENTS**

- (1) TABLE K-1, "EPA PROTECTIVE ACTION GUIDELINES"

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**TABLE K-1  
EPA PROTECTIVE ACTION GUIDELINES\***

Protective Action	PAG (projected dose)	Comments
Evacuation (or sheltering <sup>a</sup> )	1-5 rem <sup>b</sup>	Evacuation (or, for some situations, sheltering <sup>a</sup> ) should normally be initiated at 1 rem.
Administration of stable iodine	25 rem <sup>c</sup>	Requires approval of State medical officials.

<sup>a</sup>Sheltering may be the preferred protective action when it will provide protection equal to or greater than evacuation, based on consideration of factors such as source term characteristics, and temporal or other site-specific conditions.

<sup>b</sup>The sum of the effective dose equivalent resulting from exposure to external sources and the committed effective dose equivalent incurred from all significant inhalation pathways during the early phase. Committed dose equivalents to the thyroid and to the skin may be 5 and 50 times larger, respectively.

<sup>c</sup>Committed dose equivalent to the thyroid from radioiodine.

Guidance on Dose Limits for Workers Performing Emergency Services

Dose Limit <sup>a</sup> (rem)	Activity	Condition
5	all	
10	protecting valuable property	lower dose not practicable
25	life saving or protection of large populations	lower dose not practicable
>25	lifesaving or protection of large populations	only on a voluntary basis to persons fully aware of the risks involved

<sup>a</sup> Sum of external effective dose equivalent and committed effective dose equivalent to nonpregnant adults from exposure and intake during an emergency situation. Workers performing services during emergencies should limit dose to the lens of the eye to three times the listed value and doses to any other organ (including skin and body extremities) to ten times the listed value. These limits apply to all doses from an incident, except those received in unrestricted areas as members of the public during the intermediate phase of the incident.

\* EPA 400-R-92-001 - Manual of Protective Action Guides and Protective Actions for Nuclear Incidents, Dated 1991 with 2nd printing May 1992.

**ATTACHMENT 3**

NEXTERA ENERGY DUANE ARNOLD, LLC  
DUANE ARNOLD ENERGY CENTER

LICENSE AMENDMENT REQUEST (TSCR-182)

CLEAN COPY PAGES OF EMERGENCY PLAN

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Usage Level:  
**INFORMATION**

Record the following: Date / Time: \_\_\_\_\_ / \_\_\_\_\_ Initials: \_\_\_\_\_  
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Print Signature

**APPROVAL BY EMERGENCY PREPAREDNESS MANAGER**

Approved By \_\_\_\_\_ / \_\_\_\_\_ Date: \_\_\_\_\_  
Print Signature

**APPROVAL BY ORG**

Approved By \_\_\_\_\_ / \_\_\_\_\_ Date: \_\_\_\_\_  
Print Signature

**APPROVAL BY DAEC SITE DIRECTOR**

Approved By \_\_\_\_\_ / \_\_\_\_\_ Date: \_\_\_\_\_  
Print Signature

**APPROVAL BY CORPORATE DIRECTOR OF EMERGENCY PLANNING**

Approved By \_\_\_\_\_ / \_\_\_\_\_ Date: \_\_\_\_\_  
Print Signature

<b>DAEC EMERGENCY PLAN</b>	<b>SECTION 'A'</b>
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## **1.0 PURPOSE**

- (1) This section describes the responsibilities of Duane Arnold as the principal response organizations for radiological events that may occur at the Duane Arnold Energy Center (DAEC).

## **2.0 REQUIREMENTS**

### **2.1 RESPONSE ORGANIZATIONS AND RESPONSIBILITIES**

- (1) The DAEC Emergency Response Organization (ERO) provides immediate response to an emergency condition at the DAEC and promptly informs local, state, and federal officials of the situation and potential ramifications. Provisions have been made to augment the overall organization with additional personnel who possess unique technical capabilities, as well as industry and governmental agency support groups which can provide assistance in engineering and radiological dose assessment activities.
- (2) The resources available from within Duane Arnold, coupled with those available from other utilities and industry service and support firms, will be sufficient to enable continuous response over the long term. These resources ensure a 24-hour per day operations capability for an extended period.
- (3) Local and State Agencies
  - (a) County and state Radiological Emergency Response Plans, compatible with the DAEC Emergency Plan, have been developed to guide the emergency response actions of the officials and agencies of Linn County, Benton County, and the State of Iowa. These plans reflect the assignment of responsibilities for offsite protective actions and the methods of communicating among the involved local and state agencies. Offsite protective actions within the plume exposure pathway Emergency Planning Zone (EPZ) are implemented by Linn and Benton Counties.

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## 2.2 CONCEPT OF OPERATIONS

- (1) The emergency classification system and levels of activation are discussed in Section 'D'. Section 'E' discusses notification methods and procedures. This section and the remainder of the plan discuss the specific responsibilities and interrelationships of the emergency response organizations. The following summarizes the order of actions.

### (a) NOTIFICATION OF UNUSUAL EVENT

- (i) Upon occurrence of an event that is classified as a NOTIFICATION OF UNUSUAL EVENT, the Operations Shift Manager will direct prompt corrective action to ensure the plant is placed in or maintained in a stable condition. Key Duane Arnold officials as well as individuals from the NRC, local and state emergency response organizations will be notified. Support agencies such as the local fire departments, hospitals, etc., will be alerted as indicated in county emergency response plans. Should the event be of such a nature that escalation to a higher emergency action level is probable, local and state officials and agencies will be notified to stand by for full activation.

### (b) ALERT, SITE AREA EMERGENCY, or GENERAL EMERGENCY

- (i) Upon occurrence of an event classified as an ALERT, SITE AREA EMERGENCY, or GENERAL EMERGENCY, the Operations Shift Manager will direct prompt corrective action to return the plant to a stable condition and to stop or mitigate radiological releases, if they are occurring. Key Duane Arnold officials as well as individuals from local and state emergency response organizations will be notified of the event and nature of the emergency, including its classification.
- (ii) Communications will be established and maintained with these local and state agencies as described in Sections B and F to assure the flow of information necessary to assess the situation and protect the population at risk. Assessment actions will be implemented based upon the type of event and plant status to determine the potential consequences to the population at risk. The results of the assessment will be reported to local and state officials and will form the basis for decisions associated with the proper course of protective action.

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### 2.3 RESPONSE ORGANIZATIONS INTERRELATIONSHIPS

(1) The interrelationships between Duane Arnold, contractors and consultants, and local, state, and federal agencies are illustrated in Figure A-1 and are described below.

(a) DAEC

(i) Duane Arnold's relationship to the total effort includes the following:

- (a) Assessing the scope of the abnormal condition and determining the extent to which the situation is under control.
- (b) Ensuring that requisite safety-related systems and features are functioning properly, and implementing response actions that may be required to assist in regaining control of the situation.
- (c) Analyzing the potential or actual radiological impact within the plume exposure Emergency Planning Zone (EPZ) to determine the appropriate actions necessary to protect the populace within this EPZ.
- (d) Notifying appropriate local, state, and federal officials.
- (e) Defining the accident recovery functions to be performed by the Emergency Response Organization including providing assistance to the DAEC.
- (f) Assessing the existing corporate resources available and evaluating how best to apply these resources to the tasks previously defined.
- (g) Evaluation of the Emergency Response Organization and assignment of responsibilities based on this evaluation.

(b) Linn and Benton Counties

(i) The Linn and Benton County Emergency Operations Centers will coordinate their respective County's response, and will accept response requests for the DAEC.

(c) Mercy Medical Center, University of Iowa Hospitals and Clinics, and Ambulance Services

(i) Duane Arnold has made arrangements with Mercy Medical Center in Cedar Rapids, Center Point, Hiawatha, and Area Ambulance for ambulance service for the DAEC. Linn County Sheriff's Rescue will also provide medical assistance for the DAEC as needed. Both radiological and non-radiological injuries will normally be treated by medical personnel at Mercy Medical Center under the overall supervision of the DAEC Medical Consultant. As a backup, University of Iowa Hospitals and Clinics are available.

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(d) Palo Fire Department

- (i) The Palo Fire Department provides first aid and backup fire-fighting support to the DAEC. Support efforts involving radiological incidents are directed and controlled by the Emergency Coordinator.

(e) Iowa Homeland Security and Emergency Management Division, Iowa Department of Public Defense (HS-EMD)

- (i) The HS-EMD provides assistance as outlined in the State of Iowa Radiological Emergency Response Plan. In summary, support includes the following:
  - (a) Alerting State agencies.
  - (b) Coordinating state radiological monitoring of areas, personnel, and equipment in support of local county authorities.
  - (c) Evaluating offsite radiological conditions.
  - (d) Operating the State Emergency Operations Center.
  - (e) Informing federal organizations, adjacent counties, and adjacent states.
  - (f) Assisting local county authorities, through the State Highway Patrol, with establishing traffic and access control.
  - (g) Establishing exposure criteria.
  - (h) Preparing and coordinating state information releases to local and Federal agencies and to the news media.
  - (i) Coordinating state mutual aid.

(f) U.S. Nuclear Regulatory Commission (NRC)

- (i) The role of the NRC during a radiological emergency is to verify that emergency plans and procedures have been implemented, to assure that the public health and safety are protected, and to conduct investigative activities associated with the incident. The NRC will assist in coordinating federal response resources as specified in the NRC Incident Response Plan and will provide Duane Arnold, state, and local agencies advisory assistance associated with assessing and mitigating hazards to the public.

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(g) U.S. Department of Energy (DOE)

- (i) The DOE has prepared a Federal Radiological Monitoring and Assessment Plan and an Interagency Radiological Assistance Plan. Under the provisions of these plans, the DOE will, upon request from the state, dispatch radiological teams to assist local and state agencies in monitoring and provide technical guidance. For further details see Section C.

(h) Federal Emergency Management Agency (FEMA)

- (i) The Federal Emergency Management Agency will provide federal emergency response as outlined in the National Response Plan and logistical support to the state and local governments involved in an emergency.

(i) Contractors and Consultants

- (i) The Nuclear Steam Supply System (NSSS) at the DAEC was supplied by the General Electric Company, Nuclear Energy Systems Division, San Jose, California. General Electric has established 24-hour dedicated communications coverage which is monitored continuously by the Security Operations Center at General Electric Nuclear Energy, San Jose, California. This service will be used by the utility to request emergency assistance in the event of an emergency involving the NSSS. Actions will be taken in accordance with the latest Services Information Letter regarding the BWR Emergency Support Program. Contractual arrangements for these services are described in the GE Letter of Agreement.
- (ii) The Bechtel Power Corporation, Ann Arbor, Michigan, was the Architect-Engineer (AE) for the DAEC and may be requested to provide assistance. The Bechtel Emergency Response Manager will be the point of contact for the activation of Bechtel's Emergency Response Services (ERS). Upon notification from Duane Arnold of any emergency, the emergency response manager will activate Bechtel's ERS and contact the appropriate Bechtel management. Bechtel personnel will have the capability, under normal circumstances, of arriving at the DAEC within 24 hours after receipt of emergency notification. Bechtel can support many types of engineering activities. Bechtel's non-engineering departments include construction, cost and scheduling, quality assurance, procurement, and materials and quality services. Contractual arrangements for these services are described in the Bechtel Letter of Agreement.
- (iii) Other contractors and consultants will be used as their expertise, manpower, and facilities are required. Agreements and contracts are currently in place with each of these contractors which retain their services and define the commercial conditions of those services on a routine basis. In case of an emergency condition at DAEC, these private contractors could be contacted to augment the services they are currently providing. The Emergency Coordinator or Emergency Response and Recovery Director will coordinate the specific assistance requirements.

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- (j) Institute of Nuclear Power Operations
  - (i) INPO has prepared an Emergency Resources Manual (ERM) from information provided by nuclear utilities, the major AE/NSSS organizations, and responding suppliers. In general, it contains the information necessary to locate and request staff, equipment and technical support in the event of a nuclear emergency. In addition, members of INPOs staff are available to assist in obtaining these resources.

## 2.4 ORGANIZATIONAL RESPONSIBILITY

- (1) Specific individuals within the Emergency Response Organization in charge of emergency response are as follows:
  - (a) Emergency Response and Recovery Director
  - (b) Emergency Coordinator

## 2.5 DIRECTION AND COORDINATION

- (1) The effectiveness of directing and coordinating the company's emergency response organization is influenced by the activation times, the organization and the severity of the emergency condition. The response time terminology listed below and the emergency conditions described in Section D should be utilized as mobilization and functional control criteria.
  - (a) Short-Term Actions - Actions that can be taken within 1 hour of initial notification of an emergency condition.
  - (b) Near-Term Actions - Actions that can be taken within 1 to 16 hours of initial notification of an emergency condition.
  - (c) Long-Term Actions - All actions taken 16 hours or more after initial notification of the emergency condition.
- (2) Activation of Emergency Response Facilities occurs when the minimum staff for each facility, as noted in Figure B-1, has arrived, been briefed on the event, and is ready to perform command and control functions. Although the facility may be ready, turnover may be postponed in the interest of completing critical tasks. As an immediate action, the on-shift plant operations staff will initiate the callout process for augmented ERO members to ensure timely staffing of the onsite and offsite facilities. Augmenting the on-shift staff with additional off-shift personnel can occur within 60 minutes of initial declaration of the emergency condition.

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- (3) The Emergency Response and Recovery Director (ER&RD), Radiological and EOF Manager, Radiological Assessment Coordinator (or their alternates), and the Joint Information Center (JIC) Manager will be notified within the time frame specified in the Emergency Plan Implementing Procedures (EPIPs). Activation of the TSC and OSC will occur at an ALERT or higher classification. The TSC and OSC have an activation time of 60 minutes. The EOF has an activation time of 60 minutes from a Site Area Emergency or higher classification. Therefore, in the near-term, key Emergency Operations Facility staff members or their designees will be available to coordinate support activities from the Emergency Operations Facility on the 15th floor of the Alliant Tower in Cedar Rapids. During a SITE AREA EMERGENCY or GENERAL EMERGENCY condition, the EOF will be activated. When an ALERT condition is declared, personnel assigned to the EOF and JIC will leave from the DAEC and report to their respective facility, whether or not the EOF and JIC have yet been activated. Shift assignments and changes will occur within 16 hours of the initial mobilization of the Emergency Response Organization.

## **2.6 EMERGENCY RESPONSE FUNCTIONS**

- (1) For DAEC, the functions and the person responsible for each function are addressed below and summarized in Table A-1. The functions are addressed in more detail throughout the remainder of the plan, primarily in Section B.
- (a) Command and Control
- (i) The ER&RD exercises overall control of DAEC emergency response activities. He ensures the overall direction of site and corporate activities is properly focused and the necessary resources are available for proper response.
- (b) Warning/Notification Communications
- (i) The Operations Shift Manager, acting as the Emergency Coordinator, is responsible for initially notifying ERO personnel and offsite agencies of an emergency situation and for providing support information to aid in initial response.
- (c) Public Information
- (i) The JIC Manager is responsible for ensuring that communications links are established with the news media and for coordinating information releases to the media related to plant conditions and offsite radiological consequences.

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(d) Accident Assessment

- (i) The Operations Shift Manager, acting as the Emergency Coordinator, is initially responsible for assessing the magnitude and potential consequences of an emergency condition and providing this information when notifying Duane Arnold, local, state, and federal officials and agencies. Subsequently, the Site Radiation Protection Coordinator assumes responsibility for dispatching appropriate personnel to monitor the environs. Upon activation of the EOF, the Radiological Assessment Coordinator assumes responsibility for directing field monitoring teams, assessing the results of monitoring activities, apprising appropriate personnel of the results of these efforts, and assisting in the development of appropriate recommendations for protective actions to be taken by the public.

(e) Public Health and Protective Response

- (i) The Operations Shift Manager, acting as the Emergency Coordinator, is initially responsible for contact and coordination with public officials regarding protection of the general public. After activation of the Technical Support Center (TSC), the Emergency Coordinator, assisted by the Site Radiation Protection Coordinator, assumes the responsibility for contact with public officials.
- (ii) When the EOF is activated, the Radiological and EOF Manager is responsible for contact and coordination with public officials and, with the support of the Radiological Assessment Coordinator, provides recommendations associated with protective actions and alternatives that can be taken to protect the general public. He is responsible for keeping these officials apprised of changes in the condition of the plant and of releases, or planned releases, to the atmosphere.

(f) Fire, Rescue/Emergency, and Medical Services

- (i) The Operations Shift Manager, acting as the Emergency Coordinator, is responsible for requesting and coordinating these services, if needed, during the initial stages of an accident.

(g) Onsite Radiological Exposure Control

- (i) The Emergency Coordinator, assisted by the Site Radiation Protection Coordinator is responsible for controlling and minimizing radiological exposures to emergency response personnel and authorizing the performance of activities that may result in exposures in excess of normal limits. The Site Radiation Protection Coordinator is responsible for related onsite radiological monitoring activities, decontamination, and record keeping.

(h) Access Control/Security/Accountability

- (i) The Security and Support Supervisor, assisted initially by the Operations Shift Manager, will assure personnel accountability is initiated and maintained, and will limit site and facility access to authorized personnel only.

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## 2.7 AUTHORITY AND AGREEMENTS

- (1) The following identifies the legal state and federal instruments which establish authority for local and state agency support for an emergency.
  - (a) Federal Civil Defense Act of 1950 as amended (Public Law 920, 81st Congress)
  - (b) Federal Civil Defense Guide, January 1965, as amended
  - (c) Civil Preparedness Guide
  - (d) Disaster Relief Act of 1974 as amended (Public Law 92-228)
  - (e) 1993 Code of Iowa, Subtitle 12, Emergency Control and Chapter 29C, Emergency Management
  - (f) Price Anderson/Stafford Act
- (2) Written agreements have been reached and are maintained with those support organizations that have an emergency response role within the Emergency Planning Zone. These agreements establish an understanding of assigned responsibilities and ensure proper coordination of activities in the event of an emergency. Included as Appendix 2 is a list of the support organizations with which agreements have been reached. These Letters of Agreement are kept on file with the Emergency Planning Department located onsite at the DAEC.

## 2.8 EXTENDED OPERATION

- (1) The Emergency Response Organization is capable of continuous operation from the time that emergency response actions are initiated until the recovery organization, discussed in Section M, is activated. The Emergency Response and Recovery Director is responsible for ensuring continuity of resources (technical, administrative, and material). The Emergency Coordinator has been delegated authority to obtain necessary assistance from outside agencies, such as suppliers, contractors, and consultants as required to establish stable plant conditions.

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**TABLE A-1**  
**EMERGENCY RESPONSE FUNCTION AND RESPONSIBILITIES**

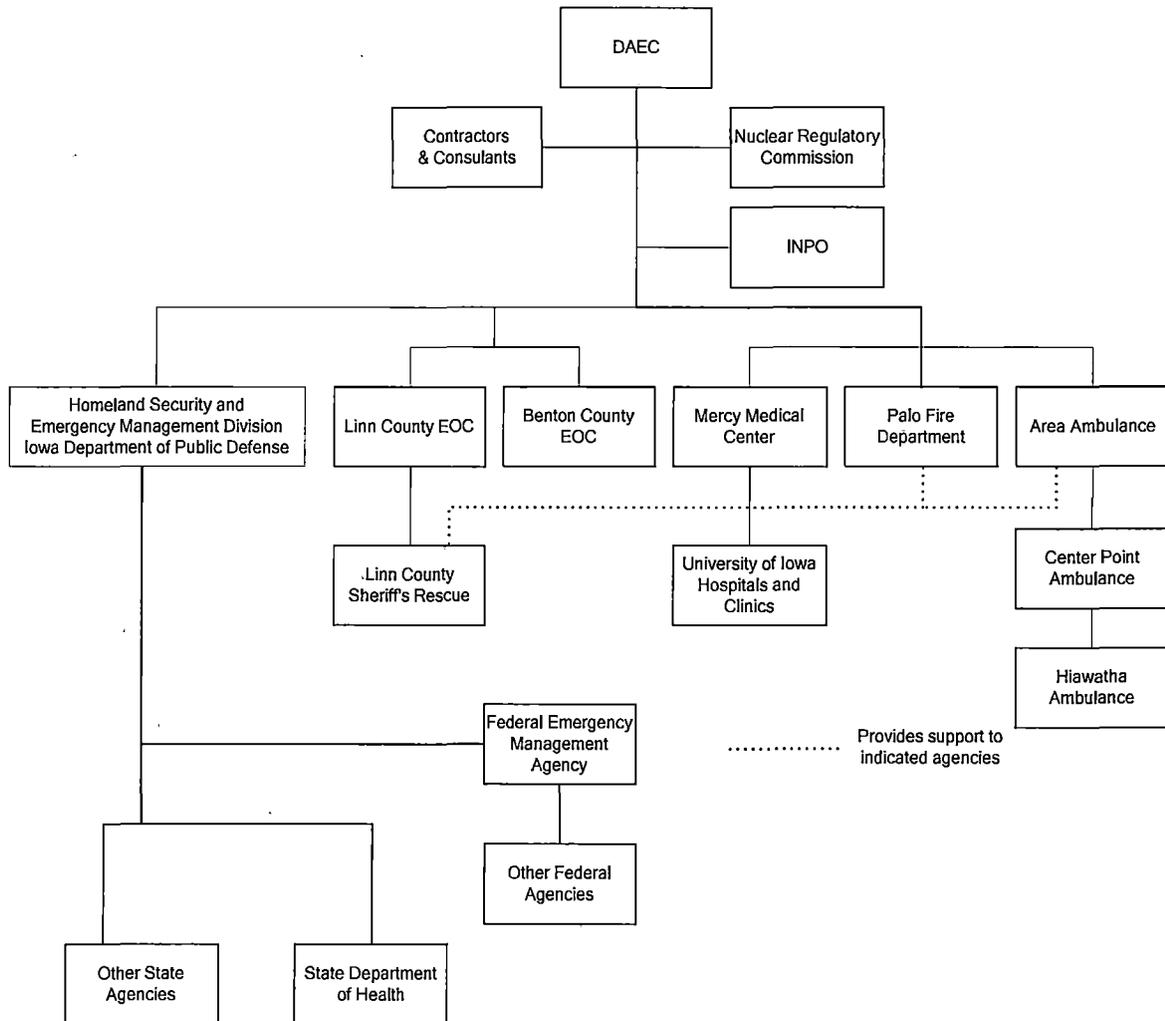
Responsible Individual

EMERGENCY RESPONSE FUNCTION	Emergency Response and Recovery Director	Radiological and EOF Manager	Radiological Assessment Coordinator	JIC Manager	Emergency Coordinator	Site Radiation Protection Coordinator	Operations Shift Manager	Security and Support Supervisor
Command and Control	L				P		I	
Alerting and Notification					L		I	
Communications	L	P			P		I	
Public Information				L				
Onsite Accident Assessment					L	P	I	
Offsite Accident Assessment			L			P	I	
Public Health and Protective Response		L	P				I	
Fire/Rescue, Emergency, Medical					L		I	
Onsite Radiological Exposure Control					L	P	I	
Access Control, Security, Accountability							I	L

I = Initial Responsibility  
L = Lead Responsibility  
P = Primary Support

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**FIGURE A-1**  
**INTERRELATIONSHIPS BETWEEN EMERGENCY ORGANIZATIONS**





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## **1.0 PURPOSE**

- (1) This section describes the structure of the Emergency Response Organization and the specific responsibilities and authorities of key response personnel. Support services available with the DUANE ARNOLD (DAEC) to augment the Emergency Response Organization are identified as well as those services that may be provided by the DAEC, contractors, and local organizations.

## **2.0 REQUIREMENTS**

### **2.1 RESPONSE POSITIONS**

- (1) The Emergency Response Organization is as illustrated in Figure B-1, and in the text of Section 'B' and Section 'H' of the DAEC Emergency Plan. Personnel qualified to fulfill the emergency response positions are identified in the Emergency Telephone Book, Learning Management System (LMS), and in the DAEC Emergency Preparedness Department's Training Records, which are considered to be the most up-to-date record available. The Emergency Response Organization (ERO) structure can be modified as required by the Emergency Coordinator or Emergency Response & Recovery Director (ER&RD).

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## **2.2 ONSITE RESPONSE ASSIGNMENTS**

Immediate response organizational assignments, lines of succession, and responsibilities are as described below, for the Onsite organization.

### **2.2.1 EMERGENCY COORDINATOR**

#### **(1) Assignment**

- (a) The Emergency Coordinator functions onsite, coordinates the total site response effort, and normally operates from the Technical Support Center (TSC). The Emergency Coordinator reports to the ER&RD and has full authority and responsibility to initiate emergency actions and to recommend appropriate offsite protective measures to local and state authorities during the initial stages of the event as discussed in Section A.

#### **(2) Lines of Succession**

- (a) The Operations Shift Manager (OSM) functions as the Emergency Coordinator until relieved. A qualified person will assume the responsibility of the Emergency Coordinator and receives turnover from the OSM. If necessary, the ER&RD will appoint the position of Emergency Coordinator and will inform the Operations Shift Manager of the appointment.

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(3) Responsibilities

(a) The Emergency Coordinator exercises full responsibility and authority for all activities at the site. This position is a 60-minute ERO response reporting position. He/she is assigned the following functional responsibilities:

- (i) Ensure the activation of the onsite Emergency Response Organization as appropriate for the classification and circumstances of the emergency condition.
- (ii) Coordinate efforts to return the plant to and maintain it in a safe, stable condition.
- (iii) Coordinate accident assessment and analyses efforts to determine the full scope and impact of the emergency.
- (iv) Ensure appropriate initial notification of DAEC, local, state, and federal officials and agencies. This function will be assumed by the Emergency Operations Facility (EOF) when activated.
- (v) Provide initial Protective Action Recommendations, as appropriate, to local and state authorities who are responsible for offsite protective measures. This function will be assumed by the Emergency Operations Facility upon activation of that facility.
- (vi) Apprise DAEC, local, state, and federal officials and agencies of updated information pertaining to the emergency condition.
- (vii) Classify/reclassify the event as necessary.
- (viii) Approve extensions on exposure limits for emergency workers, if necessary.
- (ix) Select alternate location for the Offsite Relocation & Assembly Area if radiological release and meteorological conditions warrant a change.
- (x) Prepare the Emergency Response Organization for an orderly transfer of responsibilities to the recovery organization.

(b) While the administrative aspects of most of these responsibilities may be delegated by the Emergency Coordinator, the responsibilities for items 2.2.1(3)(a)(v), 2.2.1(3)(a)(vii), and 2.2.1(3)(a)(viii) may not be delegated except as indicated herein. Upon operation of the EOF, the ER&RD assumes responsibility for these non-delegable duties.

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## 2.2.2 OPERATIONS SHIFT MANAGER (OSM)

### (1) Assignment

- (a) The OSM, located in the Control Room, shall provide direction as required to return the plant to or assure that it is maintained in a safe, stable configuration.

### (2) Lines of Succession

- (a) Generally, the Operations Shift Manager, the senior individual, assumes the role of Emergency Coordinator.

### (3) Responsibilities

- (a) The Operations Shift Manager evaluates the abnormal condition and implement emergency response actions as specified in the Emergency Plan Implementing Procedures (EPIPs) including:
- Classifying the event
  - Recommending Protective Actions, if appropriate
  - Notifying county, state, and federal officials and offsite support agencies as necessary
  - Notifying the Emergency Response Organization
  - Assist the TSC in all matters pertaining to the Control Room and to Operations Department activities.
  - Providing direction and assistance, as necessary, to the OSM/CRS to achieve and maintain stable plant conditions.
  - Assisting the OSM/CRS in coordinating operational activities.
  - Monitoring operational activities to assure that the plant is operated and maintained in as safe a condition as possible.
  - Evaluating recommendations for corrective action provided by the technical staff and operating crew and recommending to the Emergency Coordinator a course of action to be taken to mitigate the situation.
  - Recommending changes to the Emergency Classification based upon:
    - (i) Plant status changes, with or without radiological releases in progress.
    - (i) Actual or potential radiological release parameters.

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- (i) The progress of those activities undertaken to mitigate the situation and their probability for success.

### **2.2.3 SITE RADIATION PROTECTION COORDINATOR**

(1) Assignment

- (a) The Site Radiation Protection Coordinator will operate from the TSC and initiate those activities related to radiological assessment of the environs surrounding the plant during the initial stages of the event. Offsite monitoring will be assumed by the Radiological Assessment Coordinator upon activation of the EOF.

(2) Lines of Succession

- (a) The Operations Shift Manager functions as the Site Radiation Protection Coordinator until officially relieved by the Emergency Coordinator. A qualified Site Radiation Protection Coordinator informs the Emergency Coordinator that he/she is ready to assume that position's responsibilities. If necessary, the Emergency Coordinator will appoint the Site Radiation Protection Coordinator.

(3) Responsibilities

- (a) This position is a 60-minute ERO response reporting time position.
- (b) The Site Radiation Protection Coordinator is responsible for the following activities:
- Ensuring that DAEC personnel are dispatched to monitor the environs in and around the plant for radiological consequences associated with the event.
  - Conducting an initial evaluation and assessment of the results of radiological monitoring activities. Upon activation of the EOF, evaluation and assessment of all offsite monitoring activities will be assumed by the Radiological Assessment Coordinator.
  - Assessing the onsite radiological consequences and directing protective measures, including the need for partial or complete evacuation of the plant.
  - During the initial stages of the event, apprising local and state authorities, through the Emergency Coordinator, of the results of radiological monitoring activities and providing protective action recommendations based upon the projected radiological consequences to the population at risk. Upon activation of the EOF, this function will be assumed by the Radiological Assessment Coordinator.

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## **2.2.4 SECURITY AND SUPPORT SUPERVISOR**

### **(1) Assignment**

- (a) The Security and Support Supervisor will exercise supervision and direction of the security staff and direction over the personnel assigned to the TSC support staff.

### **(2) Lines of Succession**

- (a) If necessary, the Emergency Coordinator will appoint the Security and Support Supervisor.

### **(3) Responsibilities**

- (a) This position is a 60-minute ERO response reporting time position.
- (b) Upon activation of the TSC, the Security and Support Supervisor is responsible for:
  - Assuring that an accountability check for all personnel within the protected area is conducted in a timely fashion and that requisite security posts are filled.
  - Ensuring that the Emergency Response Organization notification process as described in the Emergency Plan Implementing Procedures has been initiated and is successfully completed.
  - Assuring the TSC closed ventilation system is operational and activated.
  - Limiting access into the facility to only those personnel who are members of the Emergency Response Organization, or otherwise are authorized.
  - Establishing measures that will enable continuous accountability for all personnel within the protected area once the initial accountability check has been completed.
  - Ensuring that no unauthorized personnel gain access to the site.
  - Assigning personnel for first aid duties, as required.
  - Providing overall management and direction to the support staff assembled in the TSC.

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## 2.2.5 TECHNICAL AND ENGINEERING SUPERVISOR

### (1) Assignment

- (a) The Technical and Engineering Supervisor will exercise overall management and supervision of engineering, analysis and corrective action efforts undertaken by engineering and maintenance personnel at the DAEC from the TSC. In addition, he/she will coordinate with the Emergency Response Organization for engineering support efforts undertaken at the request of the Emergency Coordinator.

### (2) Lines of Succession

- (a) If necessary, the Emergency Coordinator will appoint the Technical and Engineering Supervisor.

### (3) Responsibilities

- (a) This position is a 60-minute ERO response reporting time position.
- (b) Upon activation of the site Emergency Response Organization and the Technical Support Center, the Technical and Engineering Supervisor is responsible for:
- Verifying that the TSC is fully activated and staffed as described in the Emergency Plan Implementing Procedures.
  - Evaluating plant status and providing support to the operations staff as requested.
  - Assisting the Emergency Coordinator in establishing the priority for repair activities to be undertaken.
  - Providing direction to the technical staff comprised of support personnel such as the Fire Marshal, Safety Supervisor, and consultant/contractor representatives to analyze plant conditions and define courses of action to mitigate the emergency situation.
  - Providing direction to the engineering staff in TSC to aid in analysis of plant conditions and define courses of action to mitigate the emergency situation.
  - Coordinating corporate engineering activities with efforts being taken at the DAEC to mitigate the event and establish stable plant conditions.
  - Providing support to the Operations Support Center (OSC) Supervisor as necessary for coordinating all repair/corrective action efforts conducted at the DAEC.

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## **2.2.6 ADMINISTRATIVE SUPERVISOR**

### **(1) Assignment**

- (a) The Administrative Supervisor will provide administrative and logistics support, as required, in the event that activation of the site Emergency Response Organization is required from the Technical Support Center.

### **(2) Lines of Succession**

- (a) If necessary, the Security and Support Supervisor will appoint someone to fill this position.

### **(3) Responsibilities**

- (a) This position is a 60-minute ERO response reporting time position.
- (b) Services to be provided under the direction of the Administrative Supervisor include, but are not limited to:
  - Clerical, typing, and copying services.
  - Document retrieval.
  - Food services, clothing and overnight accommodations.
  - Coordination of transportation services and any facilities or office space needs.
  - Determining existing and potential administrative support needs and providing recommendations to the Security & Support Supervisor, as required.
  - Providing updates of status and relevant log information.

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## 2.2.7 TSC OPS LIAISON

### (1) Assignment

- (a) The TSC Operations Liaison will provide operations support, as required, in the event that activation of the site Emergency Response Organization is required from the Technical Support Center.

### (2) Lines of Succession

- (a) If necessary, the Emergency Coordinator will appoint the TSC Operations Liaison.

### (3) Responsibilities

- (a) This is a 60-minute ERO response reporting time position.
- (b) The TSC Ops Liaison is responsible for the following:
- Advising the EC on EAL/PAR declarations
  - Generating paperwork required for EAL/PAR declarations
  - Ensuring the State, Counties, and NRC receive notification regarding EALs and PARs
  - Providing an operational insight and tracking plant status
  - Advising the EC on matters that pertain to the plant as part of the Severe Accident Management Team.
  - Assist the TSC in all matters pertaining to the Control Room and to Operations Department activities.
  - Providing direction and assistance, as necessary, to the OSM to achieve and maintain stable plant conditions.
  - Assisting the OSM in coordinating operational activities.
  - Monitoring operational activities to assure that the plant is operated and maintained in as safe a condition as possible.
  - Evaluating recommendations for corrective action provided by the technical staff and operating crew and recommending to the Emergency Coordinator a course of action to be taken to mitigate the situation.

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- Recommending changes to the Emergency Classification based upon:
  - (i) Plant status changes, with or without radiological releases in progress.
  - (ii) Actual or potential radiological release parameters.
  - (iii) The progress of those activities undertaken to mitigate the situation and their probability for success.
- Ensure Control Room is kept informed of TSC and OSC activities and priorities.
- Assist EC and Control Room on plant condition status and trends.
- Planning work packages for repair activities with assistance of engineering personnel in the TSC.

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## **2.2.8 OPERATIONAL SUPPORT CENTER (OSC) SUPERVISOR**

### **(1) Assignment**

- (a) The OSC Supervisor will exercise supervision and direction over the personnel who report to the OSC. He/she will report to the Emergency Coordinator in the TSC and will coordinate repair/corrective action efforts conducted at DAEC.

### **(2) Lines of Succession**

- (a) If necessary, the Emergency Coordinator will appoint the OSC Supervisor.

### **(3) Responsibilities**

- (a) This position is a 60-minute ERO response reporting time position.
- (b) Upon activation of the Emergency Response Organization the OSC Supervisor is responsible for:
  - Supervising the implementation of the tasks and staffing delineated by the Emergency Assignment Staffing Board.
  - Providing general supervision and direction to personnel who report to the OSC.
  - Coordinating evacuation from the site of all unnecessary personnel during events classified as a SITE AREA or GENERAL EMERGENCY, once such an evacuation has been authorized by the Emergency Coordinator.
  - Coordinating all repair/corrective action efforts conducted at the DAEC to achieve stable plant conditions and to terminate any uncontrolled or excessive radiological release.
  - Ensuring that personnel dispatched from the OSC are properly briefed and equipped for their assignment in regards to technical content, as well as ALARA, including existing and potential radiological hazards.

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## 2.2.9 HEALTH PHYSICS SUPERVISOR

### (1) Assignment

- (a) The Health Physics Supervisor will provide overall direction and supervision in regards to ALARA and radiological practices to personnel in the OSC. In addition, he/she will provide direction to personnel for habitability of assembly areas.

### (2) Lines of Succession

- (a) If necessary, the OSC Supervisor will appoint the Health Physics Supervisor.

### (3) Responsibilities

- (a) This position is a 60-minute ERO response reporting time position.
- (b) Upon activation of the Emergency Response Organization the Health Physics Supervisor is responsible for:
- Ensuring that personnel dispatched from the OSC are properly outfitted with protective clothing and equipment, briefed regarding ALARA, and apprised of existing and potential radiological hazards.
  - Coordinating with the Site Radiation Protection Coordinator to obtain information regarding plant status, problems, response options, significant radiological releases in progress, offsite dose rates, plume location, and meteorological conditions as necessary.
  - Ensuring the determination of habitability of assembly areas and ERO facilities.
  - Coordinating the dispatch of monitoring teams and Offsite Relocation and Assembly Area (ORAA) personnel.
  - Ensuring the ORAA is briefed periodically in terms of plant and radiological conditions.
  - Supervising efforts to prepare injured/contaminated personnel for transport to offsite medical facilities.
  - Planning work packages for repair activities with assistance of engineering personnel in the TSC.

## 2.2.10 MINIMUM STAFFING

- (1) On-shift staffing and staff augmentation assignments are identified in Table B-1. The staffing plan is consistent with the guidance contained in NUREG-0654. On-shift staffing

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as noted in Table B-1 has been validated by an On-shift Staffing Analysis completed in accordance with the requirements of 10 CFR 50 Appendix E, IV.A.9. Details regarding the assignments and associated responsibilities are addressed in the EPIPs.

### **2.2.11 OTHER DAEC ORGANIZATIONAL ASSIGNMENTS**

In addition to the key response personnel described in the preceding sections, other DAEC personnel will assume roles as necessary in supporting the overall emergency response. Assignments and responsibilities of these support groups follow:

(1) Security

- (a) Upon activation of the plan, for events classified as an ALERT or greater, the DAEC Security Force is responsible for performing an accountability check for all personnel within the protected area and controlling access to the site property. If evacuation of the site is required, the Security Force will assist in the evacuation and conduct an accountability check of all personnel dispatched to the ORAA.

(2) Administrative

- (a) The DAEC Administrative Support Staff will provide general logistical support functions to aid response organization activities. This includes long range planning for providing personnel, material, facilities and office and clerical services. Additionally, the administrative staff will coordinate warehouse and procurement activities and obtain life support services such as food, clothing, and overnight accommodations.

(3) Technical/Engineering

- (a) The technical and maintenance support staffs will provide plant engineering, maintenance assistance and coordination of corrective actions taken to mitigate the emergency condition, or terminate a release. This includes analytical and engineering efforts of site and corporate engineers and supervision and technical direction of activities performed by engineering, maintenance, or construction crafts.

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(4) Quality Assurance

- (a) Quality Assurance can provide assistance to design, procurement, and construction activities that are required to establish cold shutdown conditions. Quality Assurance can define and track activities that are not conducted in accordance with normal established practices, and can ensure that post-accident evaluations are conducted to verify the acceptability of those activities for both short and long term service.

(5) Materials Management (Warehouse)

- (a) The Warehouse Supervisor will provide warehouse and procurement support in the event that procurement of specialized parts/equipment not currently stored on-site, or available locally, is required.
  - (i) The site staff has the ability to procure site stores, and locally available stores, (equipment, parts, etc.) without involving the Warehouse Supervisor.

(6) Contracts and Agreements

- (a) Assistance to the emergency response effort will be available from the Nuclear Steam Supply System supplier (General Electric), Architect-Engineer (Bechtel) and other consultants. Agreements and contracts are currently in place with each of these organizations which retain their services and define the commercial conditions of those services on a routine basis. In case of an emergency condition at DAEC, these private contractors could be contacted to augment the services they are currently providing. Agreements have been negotiated for emergency services as necessary. Section A of the DAEC Emergency Plan provides further details on the availability of contractors and consultants.

(7) Safety

- (a) The Safety Specialist can advise Corporate Management in the area of safety. When a personal injury accident occurs at DAEC, the Safety Specialist can provide investigative reports reflecting the events that led up to the accident. He/she can indicate whether safety rules and procedures were followed and recommend follow-up corrective/disciplinary actions. Additionally, the Safety Specialist is responsible for reporting all serious accidents to the Iowa Occupational Safety and Health Administration, a branch of the Iowa Bureau of Labor.

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## **2.3 OFFSITE (EOF & JIC) RESPONSE ASSIGNMENTS**

2.3.1 The Emergency Operations Facility and Joint Information Center (JIC) provide the following principal functions in the overall response to an emergency at the DAEC once control is transferred from the Technical Support Center:

- (1) Establishes a single focal point for performing radiological dose assessment and Protective Action Recommendation decision-making, including coordination and interface with local, state, and federal support groups
- (2) Establishes a coordinated means to disseminate information related to the accident to public officials, the news media, and industry public relations forums.

2.3.2 Response positions are as follows:

- (1) Emergency Response and Recovery Director (ER&RD)

(a) Assignment

- (i) The ER&RD is responsible for the overall direction and control of DAEC's integrated emergency response and recovery effort and providing the financial resources and contractual capabilities to ensure requisite actions can be taken to protect the health and safety of the public.

(b) Responsibilities

- (i) This is a 60-minute ERO response time reporting position.
- (ii) Ensuring that the Emergency Response Organization is staffed by qualified personnel and coordinating with these personnel to ensure that sufficient support for various functions is available, either from within Duane Arnold or from outside organizations (i.e., other utilities, Architect Engineers, Nuclear Steam Supply System suppliers, INPO, consultants, etc.).
- (iii) Authorizing the procurement of equipment, materials, and resources, as necessary, to effectively respond, control, and recover from an accident condition at DAEC.
- (iv) Implementing the Emergency Plan Implementing Procedures (EPIPs).
- (v) Reviewing and concurring with Protective Action Recommendations prior to their issuance once the Emergency Operations Facility (EOF) is operational.

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(2) Radiological and EOF Manager

(a) Assignment

- (i) The Radiological and EOF Manager is responsible for coordinating and directing all offsite radiological monitoring and dose assessment programs and supervising activities within the EOF. He/she will be accountable to the ER&RD.

(b) Responsibilities

- (i) Establishing communications with the TSC as necessary. Obtaining information on the diagnosis and prognosis of the accident condition, the quantities of radioactive material releases, and the prevailing meteorological conditions.
- (ii) Coordinating the onsite and offsite radiological monitoring activities to provide anticipated release rates and projected dose rates.
- (iii) Assisting and interfacing with county, state, federal and support agencies to relate accident information necessary for the offsite authorities to implement their county and state emergency plans and procedures.
- (iv) Interpreting radiological data for updating the ER&RD, county, state, federal and support agencies in terms of projected radiological exposures and actual dose measurements. This includes providing estimates of total population exposure when necessary. Providing radiation protection for those assembled at the EOF.
- (v) Analyzing all information for significant trends while developing Protective Action Recommendations (PARs). Review the recommendations with the Emergency Response and Recovery Director and, when authorized, provide them to the state and county officials.
- (vi) Providing assistance to county, state, and federal officials for recovery activities.
- (vii) Advising the ER&RD to ensure compliance with legal and regulatory requirements.

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(3) Radiological Assessment Coordinator

(a) The Radiological Assessment Coordinator is responsible for the following:

- (i) Directing and coordinating offsite monitoring teams.
- (ii) Performing dose projection calculations.
- (iii) Providing Protective Action Recommendations, as required, to the Radiological and EOF Manager.
- (iv) Coordinating the necessary support to other Agencies and support groups in field assessment, data analysis, and environmental sample analysis.
- (v) Coordinating with the State of Iowa in tracking the plume offsite.

(4) Support Services Coordinator

(a) The Support Services Coordinator will assure that necessary resources and activities are provided by staff personnel. Specific areas are available to support the overall emergency response and recovery effort conducted both at the Alliant Tower and at the site. This includes security, communications, personnel, transportation, purchasing, industrial relations, and safety. He/she will also coordinate, as necessary, the application of resources and equipment available within Duane Arnold departments.

(i) Security

- The Support Services Coordinator in cooperation with the Alliant Corporate Security Manager is responsible for providing security for the Alliant Tower and controlling access to the EOF, JIC, and backup facility to the JIC as well as appropriate Duane Arnold working areas in the building. Staff assistance for building security will be provided by the security force under contract, and, to the extent possible, the Cedar Rapids Police Department and the Linn County Sheriff's office. Further details and instructions for establishing and maintaining security are provided in the EPIPs.

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(ii) Communications

- The Local Telephone Companies can provide engineering support for commercial telephone installations that are permanent or temporary. He/she can respond to identified communication needs and problems and coordinate necessary engineering and maintenance support for restoration or rearrangement of Duane Arnold communications systems.

(iii) Corporate Services

- The Corporate Services Department can provide required services and equipment such as record and document retrieval and reproduction, office supplies, office furniture, photography, facility and area maps, audio visual aids, graphics, printing, distribution services, and general housekeeping services.

(iv) Personnel

- Administrative personnel can be contacted to provide personnel to augment the administrative and clerical support functions associated with initial activation and continued operation of the EOF and JIC.

(v) Logistics and Transportation

- Transportation personnel can respond to identified transportation needs and emergency air and land transportation necessary for materials and personnel. He/she can arrange for rental cars and hotel accommodations for those personnel temporarily assigned to the Cedar Rapids area in support of the response and recovery effort. They can also provide for repairing and maintaining a transportation fleet and implementing contracts with commercial carriers to obtain priority transportation.

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(vi) Purchasing

- Purchasing and Materials personnel can respond to identified needs related to procurement of materials and services and coordinate onsite and offsite procurement activities to assure rapid delivery of materials. They can augment Duane Arnold resources by activating contracts with outside agencies and requesting, through use of prepared lists, emergency equipment available in Cedar Rapids.

(vii) Industrial Relations

- The Manager, Industrial Relations can assess and respond to contractual problems that may arise during the course of the event and apprise bargaining unit officials and trade counsels of existing or projected labor problems. He/she can also assist in the response to manpower needs through the use of established manning lists, a computerized skill inventory of DAEC employees, and the activation of established contracts/agreements with outside organizations.

(viii) Supplemental Resources

- The Operations and Production Departments of Duane Arnold can augment the DAEC staff during an emergency. Personnel and equipment are available to provide maintenance and construction services at the DAEC. Materials, equipment, and machine shop services are also available.

(5) EOF Ops Liaison

(a) The EOF Ops Liaison is responsible for the following:

- (i) Advising the ER&RD on Emergency Action Levels
- (ii) Providing an operational insight and tracking plant status
- (iii) Assisting in the recovery phase of the emergency
- (iv) Advising the ER&RD on matters that pertain to the plant

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(6) Joint Information Center (JIC) Manager

- (a) The JIC Manager is responsible for ensuring that accurate and timely information is provided to the public and the news media; coordinating press statements and news media briefings with local, state and federal public relations officials; and coordinating information with the Corporate Communications Department. His/her specific responsibilities include:
  - (b) Initiating notification of the Duane Arnold Emergency Information Organization and determining the extent to which the Joint Information Center (JIC) will be activated.
  - (c) Directing activities at news conferences.
  - (d) Coordinating the release of all information prepared by the JIC and ensuring that it receives concurrence from the DAEC Spokesperson or his/her designee as being technically accurate prior to its release.
  - (e) Providing overall direction and coordination of all emergency response activities conducted by the DAEC personnel in the JIC.
  - (f) Providing DAEC departments and employees with information consistent with that released to the media.

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## **2.4 LONG-TERM ORGANIZATION**

- (1) Activation of the onsite Emergency Response Organization will, directly and indirectly, result in a response by essentially all personnel normally associated with the DAEC, particularly by management and key support personnel. Therefore, within several hours after the initiating event, decisions will be made to provide and prepare for a long term augmented emergency organization. The Emergency Response and Recovery Director will determine when the Recovery Organization is to be implemented. Prior to implementation of the Recovery Organization, the situation may require that the onsite Emergency Response Organization remain in place for a protracted period of time. As conditions allow, shift schedules will be developed by the various facilities. Prior to implementation, these schedules shall be reviewed and concurred with by the facility leads. The Emergency Response Organization is set up on a team concept for 24-hour coverage.
  
- (2) Duane Arnold maintains the resources and capabilities to support response and recovery activities in the event of an emergency or accident condition at the DAEC. These include, but are not limited to, the following:
  - (a) Management direction and control
  - (b) Corporate and government affairs
  - (c) Public information and public relations
  - (d) Communications systems
  - (e) Security and administration
  - (f) Medical and first aid
  - (g) Transportation and accommodations
  - (h) Commissary and catering
  - (i) Purchasing and stores
  - (j) Construction, maintenance, and mobile equipment and materials

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- (k) Appropriate staff and work force augmentation
- (l) Engineering activities
  - (i) Nuclear fuel
  - (ii) Design and construction
  - (iii) Electrical, instrumentation, mechanical
  - (iv) Chemistry and metallurgy
- (m) Planning and scheduling
- (n) Radiological analysis and protection
- (o) Accident analysis
- (p) Meteorological monitoring and analysis
- (q) Health physics and decontamination
- (r) Fire Protection
- (s) Procedure development
- (t) Operations and maintenance
- (u) Quality assurance and control
- (v) Contracts and agreements
- (w) Company records and files
- (x) Safety

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## **2.5 INTERFACES**

2.5.1 Figures B-2 and B-3 illustrate the immediate and long-term response interfaces, respectively, between the Emergency Response Organization and organizations of affected local, state and federal offices and agencies. The TSC, OSC, EOF, and JIC are described and discussed in Section H.

### **(1) Public Information and Governmental Relations**

(a) During an emergency situation, the Joint Information Center (JIC), located in the Alliant Tower, can provide timely and accurate information to the news media and to public officials. The JIC working area is located on the fifteenth floor of the Tower and contains a conference room, and is equipped with computers, printers, copiers and a full complement of communications capabilities. The press briefing room is located on the sixth floor and can accommodate media personnel for registration, inquiries, mass briefings, and press conferences. If the Cedar Rapids/Marion metropolitan area is evacuated, JIC spokespersons and appropriate support staff can be relocated to facilities on the main campus of Kirkwood Community College to continue media briefings and news conferences.

### **(b) Press Briefings and Public Relations**

(i) The Joint Information Center will function as the principal focal point for distribution of information to the public regarding the emergency condition at the DAEC. Press briefings will be coordinated by the JIC Manager, who will ensure that appropriate emergency response and corporate individuals are available to provide technical information and respond to inquiries from the assembled media personnel. Information related to the plant as well as generic information related to the nuclear industry will be available to the media. Further details and instructions related to press briefings and public relations are provided in the EIPs.

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<b>EMERGENCY RESPONSE ORGANIZATION</b>	Rev. 41 Page 26 of 34

(c) Apprising Public Officials and Agencies

- (i) The facilities in the JIC will be used, as appropriate, following the issuance of Protective Action Recommendations (PARs), for follow-up discussions and briefings of government officials and industry spokespersons on the status of the event, actions being taken, and evaluations assessing the impact upon the public.

(2) Corporate Assistance

(a) Legal Counsel

- (i) Legal Counsel can provide the ER&RD with advice to prevent DAEC from taking actions that could increase corporate liability or jeopardize indemnification agreements when handling claims and litigation.

(b) Insurance and Claims

- (i) Insurance and Risk personnel can advise the ER&RD in the area of insurance and claims, and provide them with regular status reports on the injured or contaminated individuals treated at nearby medical facilities. They interface with American Nuclear Insurers and can apprise them of the details, the sequence of events, the impact of the emergency, and the actions being taken to mitigate its consequences. They also interface with Nuclear Electric Insurance Limited and Nuclear Mutual Limited (NEIL/NML), a utility-owned captive insurance group, which covers the loss of generation and coordinates claims filed on behalf of DAEC.
- (ii) Insurance and Risk personnel will coordinate with nearby medical facilities and backup medical facilities at the University of Iowa Hospitals and Clinics, as required, in the treatment of radiological and non-radiological injuries. Insurance and Risk personnel can also complete all insurance forms and document all events affecting insurance and claims during the emergency.

**2.6 LOCAL SUPPORT SERVICES**

- (1) Agreements have been reached with local agencies and private support facilities with regard to the type of support that will be furnished to the DAEC in the event of an

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emergency. These agreements in the form of letters of agreement (refer to Appendix 2 for list of letters) and agreements of responsibility as described in the Linn and Benton County Radiological Emergency Response Plans have been developed to ensure that there is a clear understanding of assigned responsibilities and that there will be proper coordination of activities in the event of an emergency. The Letters of Agreement will be updated as necessary and confirmed as acceptable at least every two years.

Linn County, Benton County, and the State of Iowa are notified of classified events using the communication methods described in Section E "Notification Methods and Procedures". Through this formal process, and other informal communication processes, resources can be requested from the County and State Emergency Response Organizations. Existing agreements are in place to supply the site with resources requested. Examples are:

- (a) Emergency Medical Services (EMS) – Emergency medical services and ambulances as requested by DAEC and implemented using the Incident Command System (ICS).
- (b) Fire and Rescue – Fire response, fire apparatus, and volunteer firefighters as requested by DAEC and implemented using the ICS.

Additionally, the Counties have mutual aid agreements to obtain additional resources from surrounding counties. Processes are also in place for Counties to request resources from the State.

The site Security Plan contains information on how local law enforcement is contacted for a hostile action.

### **3.0 ATTACHMENTS**

- (1) Table B-1, "On-Shift Staffing & Staff Augmentation Assignments"
- (2) Figure B-1, "Onsite Emergency Response Organization"
- (3) Figure B-2, "Immediate Response Interface"
- (4) Figure B-3, "Long-Term Response Interface"

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Table B-1  
On-Shift Staffing & Staff Augmentation Assignments

Major Functional Areas	Major Tasks	Position Title or Expertise (All positions are 24-hour staffing)	On-Shift * = see Comments	Capability for additions		Response Location	Comments	
				60 min	90 min			
Plant Operations and assessment or operational aspects	Respond to condition and mitigate operational event consequences	Operations Shift Manager (Certified Fuel Handler)	1			CR	Provides early direction and control until relieved by the Emergency Coordinator One NCO is designated as the Fire Brigade Leader	
		Non-Certified Operator (NCO)	2			CR		
Emergency Direction and Control Notification/ Communications	Site utility Emergency Management Notify licensee, state, local & federal personnel and maintain communications	Operations Shift Manager (CFH)	*			CR	Assumed by the OSM until relieved  Assumed by the OSM until relieved	
		Operations Shift Manager (CFH)	*			CR		
		TSC Operations Liaison			1			TSC
		NRC ENS Communicator			1			TSC
		Rad & EOF Manager				1		EOF
Radiological Accident Assessment and Support of Operational Accident Assessment	Overall utility Emergency Management and offsite agency interface  Offsite Dose Assessment and Protective Action Recommendations	EOF Ops Liaison			1	EOF	Performs dose assessment until relieved	
		Emergency Coordinator			1	TSC		
		Emergency Response and Recovery Director			1	EOF		
		NCO	*					
		Site Radiation Protection Coordinator			1			TSC
		MIDAS Operator			1	TSC		
		Rad Assessment Coordinator			1	EOF		
		MIDAS Operator			1	EOF		
<b>Page 1 Subtotal</b>			<b>3</b>	<b>8</b>	<b>2</b>			

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Table B-1  
On-Shift Staffing & Staff Augmentation Assignments

Major Functional Areas	Major Tasks	Position Title or Expertise (All positions are 24-hour staffing)	On-Shift * = see Comments	Capability for additions		Response Location	Comments
				60 min	90 min		
	Offsite Surveys	HP Technician		1		OSC	May be staffed by Plant Personnel trained in the HP role for Field Teams.
		DAEC Staff Member		1		OSC	
		HP Technician			1	OSC	May be staffed by Plant Personnel trained in the HP role for Field Teams
	Onsite and in-plant Surveys	DAEC Staff Member			1	OSC	
		HP Technician	1	1		OSC	
<b>Plant System Engineering Repair and Corrective Actions</b>	Chemistry/ Radiochemistry	Chemistry Technician	*	1		OSC	Performed by HP Technician until relieved
	Technical Support	Tech and Engineering Supervisor		1		TSC	
	Repair and corrective actions	OSC Supervisor		1		OSC	
		Mechanical Maintenance		1		OSC	
		Electrical Maintenance		1		OSC	
		I&C Technician			1	OSC	
<b>Protective Actions (in plant)</b>	Radiation Protection including Access control, RP coverage for repair and corrective action, search & rescue, first aid and firefighting	HP Technician	*	1	1	OSC	Performed by RP Technician responsible for onsite and in-plant surveys

<b>Page 2 Subtotal</b>	<b>1</b>	<b>9</b>	<b>4</b>
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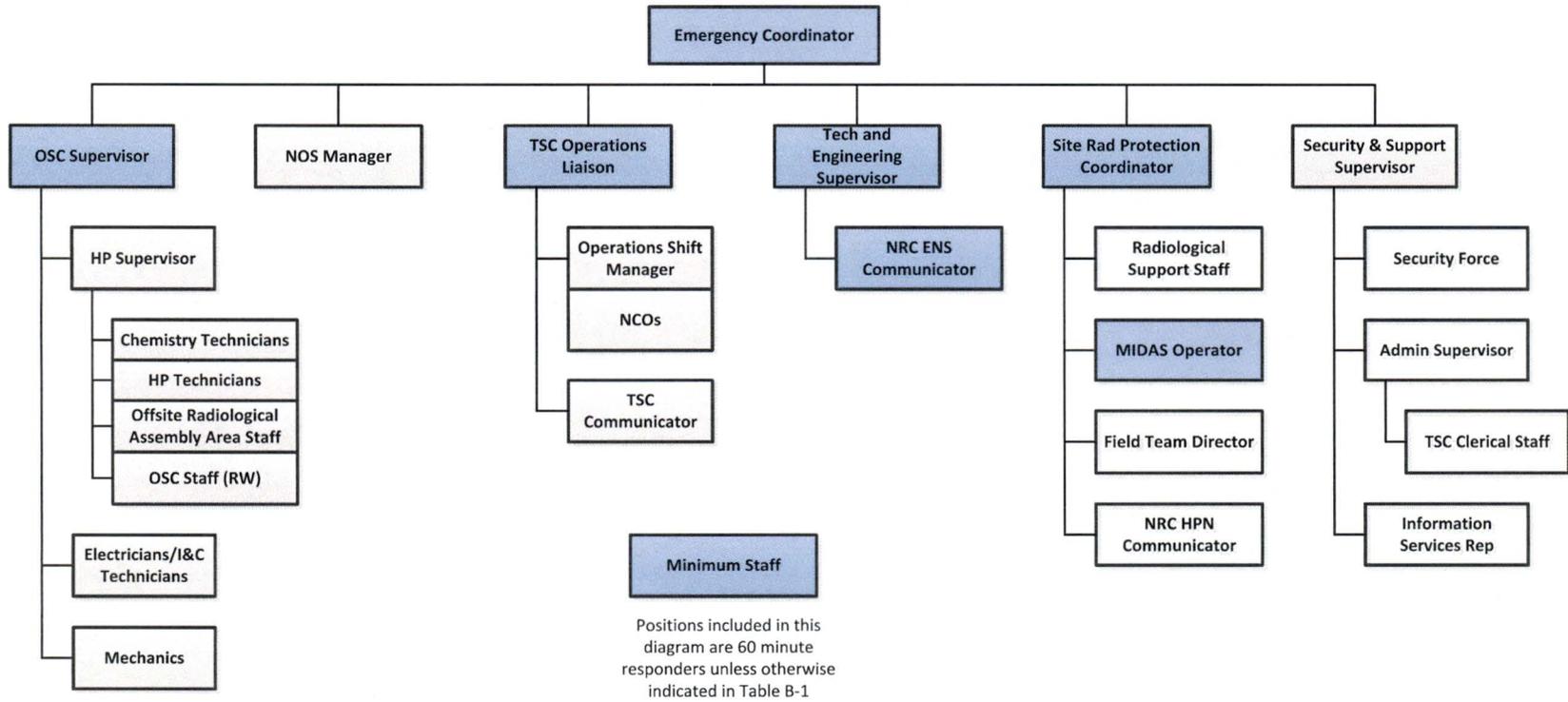
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Table B-1  
On-Shift Staffing & Staff Augmentation Assignments

Major Functional Areas	Major Tasks	Position Title or Expertise (All positions are 24-hour staffing)	On-Shift * = see Comments	Capability for additions		Response Location	Comments
				60 min	90 min		
Fire Fighting			4	*	Local	Support	Fire Brigade per FP-AB-100. May be provided by shift personnel assigned other functions. All per Security Plan.
Rescue Operations and First Aid				*	Local	Support	
Site Access Control and Personnel Accountability	Security, fire fighting, Communications, personnel accountability	Security		*			
			<b>Page 1 Subtotal</b>	<b>3</b>	<b>8</b>	<b>2</b>	
			<b>Page 2 Subtotal</b>	<b>1</b>	<b>9</b>	<b>4</b>	
			<b>Page 3 Subtotal</b>	<b>4</b>	<b>0</b>	<b>0</b>	
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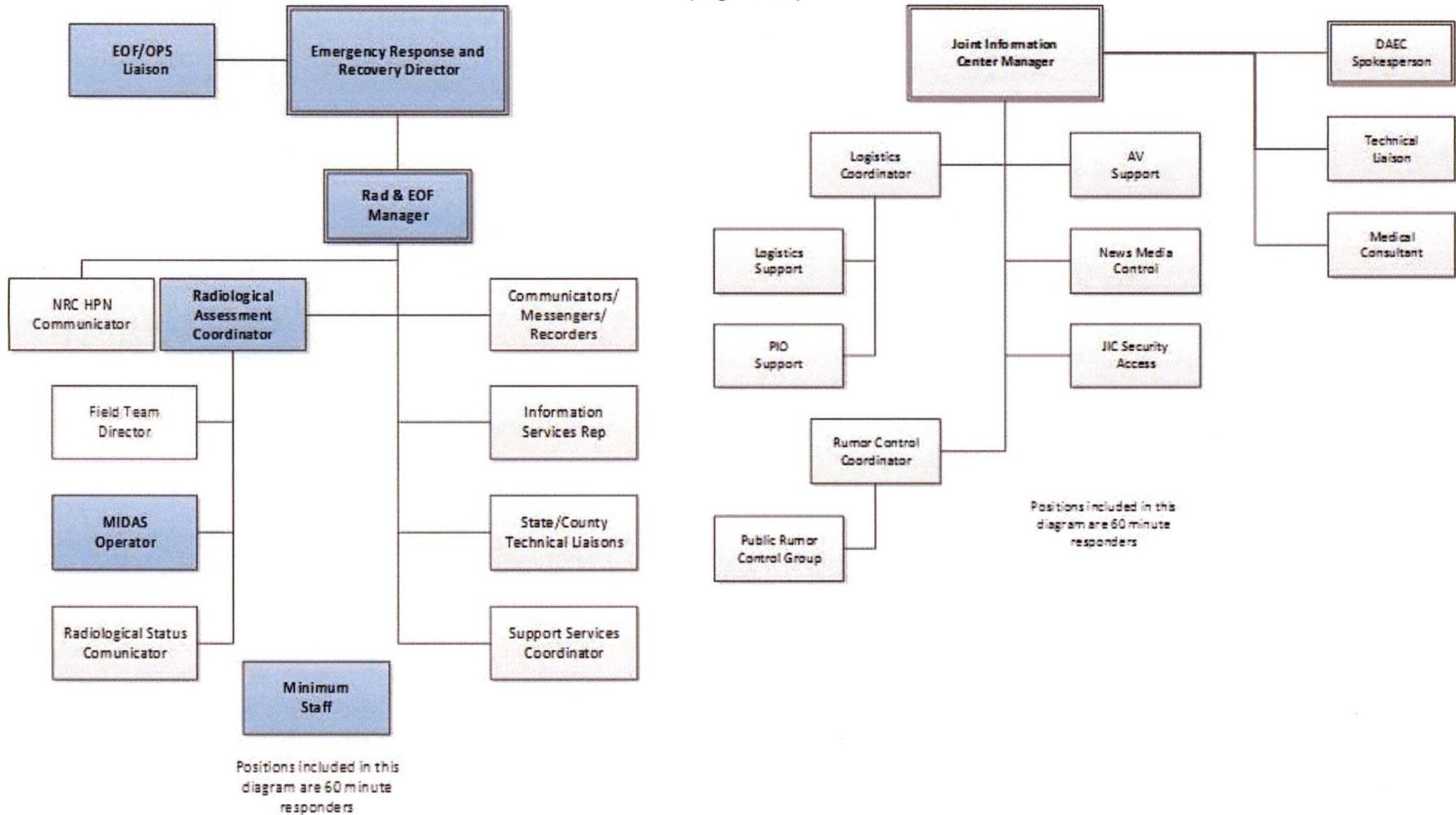
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Figure B-1  
ONSITE EMERGENCY RESPONSE ORGANIZATION  
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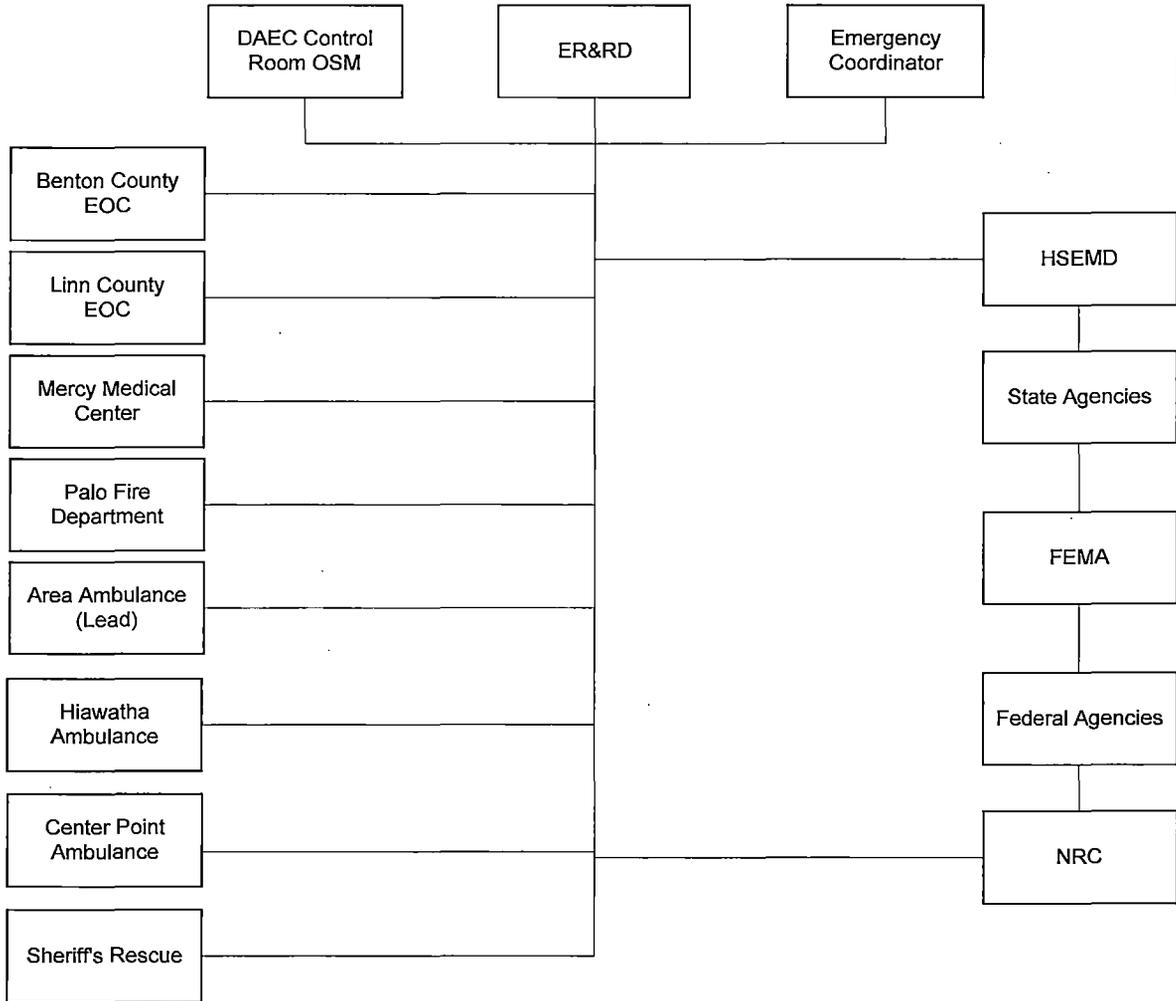
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<b>EMERGENCY RESPONSE ORGANIZATION</b>	Rev. 41 Page 32 of 34

Figure B-1  
CORPORATE EMERGENCY RESPONSE ORGANIZATION  
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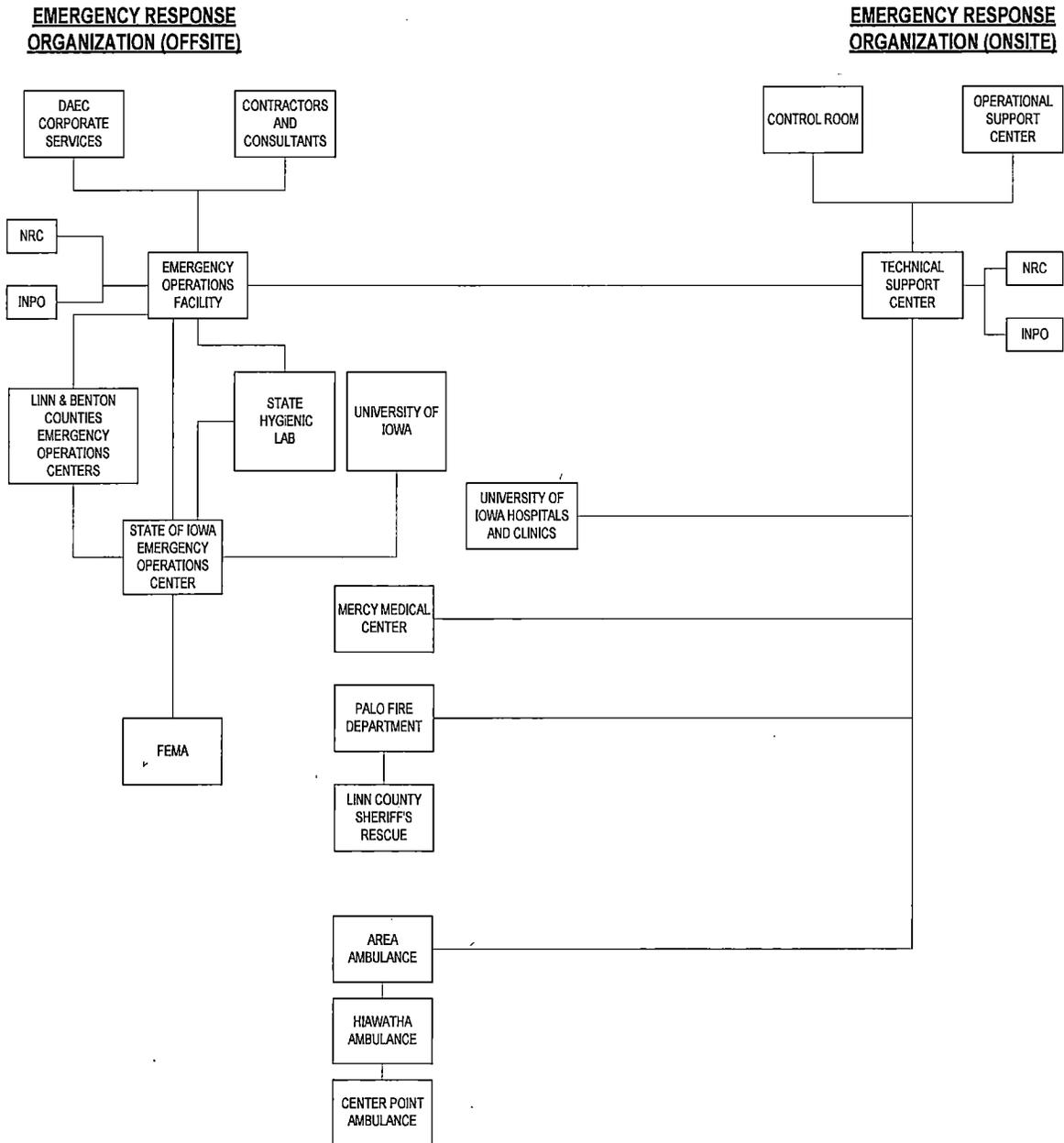
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<b>EMERGENCY RESPONSE ORGANIZATION</b>	Rev. 41 Page 33 of 34

Figure B-2  
IMMEDIATE RESPONSE INTERFACE



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Figure B-3  
LONG-TERM RESPONSE INTERFACE



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<b>DAEC EMERGENCY PLAN</b>	<b>SECTION 'D'</b>
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3.0	EMERGENCY ACTION LEVEL (EAL) INITIATING CONDITIONS	4
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<b>DAEC EMERGENCY PLAN</b>	<b>SECTION 'D'</b>
<b>EMERGENCY CLASSIFICATION SYSTEM</b>	Rev. 29 Page 3 of 10

## **1.0 PURPOSE**

- (1) This section describes the system used to classify emergency conditions. This system is consistent with that set forth in Appendix 1 of NUREG-0654 and is the system used by state and local organizations. The Emergency Action Levels established for each emergency classification are reviewed annually with offsite authorities who are responsible for implementing protective measures for the population at risk.

## **2.0 EMERGENCY CLASSIFICATION SYSTEM**

- (1) Each emergency classification is associated with a particular set of immediate actions that are identified in EPIP Manual Appendix 1; forms EAL-01 and EAL-02. Specific details regarding required actions to be taken at the DAEC for each class of emergency are specified in the EIPs. The specific instruments, parameters, and status indicators used to establish the emergency classification are specified in the Emergency Plan Implementing Procedures. If an emergency condition changes in severity, it will be reclassified and the corresponding response actions will escalate or de-escalate accordingly.
- (2) The highest emergency classification for which an Emergency Action Level (EAL) is currently met should be DECLARED. If an action level for a higher classification is exceeded but the situation is resolved prior to offsite notification, the higher classification should be REPORTED to the offsite agencies and the NRC, but SHOULD NOT be declared. The notification must indicate the CURRENT classification, the period of time that the higher classification existed and the mitigating conditions that caused the reduction in the emergency classification.

### **2.1 NOTIFICATION OF UNUSUAL EVENT**

- (1) This class of emergency conditions includes the least severe events requiring offsite notification. This classification will be declared whenever events are in progress or have occurred which indicate a potential degradation of the level of safety of the plant or indicate a security threat to facility protection has been initiated. No release of radioactive material requiring offsite response or monitoring are expected unless further degradation of safety systems occurs.

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<b>EMERGENCY CLASSIFICATION SYSTEM</b>	Rev. 29 Page 4 of 10

## **2.2 ALERT**

- (1) The ALERT emergency condition is the second class in increasing order of severity. This emergency classification will be declared whenever events are in progress or have occurred which involve an actual or potential substantial degradation of the level of safety of the plant or a security event that involves probable life threatening risk to site personnel or damage to site equipment because of HOSTILE ACTION. Any releases are expected to be limited to small fractions of the EPA Protective Action Guideline exposure levels. Accidents analyzed in Chapter 15 of the Updated Final Safety Analysis Report that fit this classification include the Fuel Handling Accident.

## **2.3 SITE AREA EMERGENCY**

- (1) The SITE AREA EMERGENCY condition is the third class in increasing order of severity and requires immediate notification of the public. This classification will be declared whenever events are in progress or have occurred which involve actual or likely major failures of plant functions needed for protection of the public or HOSTILE ACTION that results in intentional damage or malicious acts; (1) toward site personnel or equipment that could lead to the likely failure of or; (2) prevents effective access to equipment needed for the protection of the public. Any releases are not expected to result in exposure levels which exceed EPA Protective Action Guideline exposure levels beyond the site boundary.

## **2.4 GENERAL EMERGENCY**

- (1) The GENERAL EMERGENCY condition is the most severe and requires immediate notification of the public. This emergency classification will be declared whenever events are in progress or have occurred which involve a HOSTILE ACTION that results in an actual loss of physical control of the facility, or releases that can be reasonably expected to exceed EPA Protective Action Guideline exposure levels offsite.

## **3.0 EMERGENCY ACTION LEVEL (EAL) INITIATING CONDITIONS**

- (1) The EAL Tables, located in the EPIP Manual Appendix 1, forms EAL-01 and EAL-02, identify the specific conditions and associated limits that serve as the basis for initiating the appropriate monitoring, assessment, and response actions described in this plan. As the severity of each condition increases, the event is classified (or reclassified), based

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upon instruments, equipment status, and parameters identified in the EAL Tables to assure that appropriate emergency response actions are being taken.

- (2) The EALs are based upon one or more of the following criteria:
- (a) System design specifications
  - (b) Technical Specification limits
  - (c) FSAR accident analyses
  - (d) 10CFR20 and 10CFR100 requirements
  - (e) EPA 400-R-92-001 Manual of Protective Action Guides and Protective Actions for Nuclear Incidents (dated October 1991 with 2nd printing May 1992)
  - (f) NUREG-0578, "TMI-2 Lessons Learned Task Force Status Report and Short-Term Recommendations."
  - (g) NUREG-0654, FEMA-REP-1, Revision 1, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants."
  - (h) NEI Methodology for Development of Emergency Action Levels NEI 99-01, Revision 5, February 2008
  - (i) NRC Bulletin 2005-02, Emergency Preparedness and Response Actions for Security-Based Events, July 18, 2005 as clarified by NEI Industry White Paper Dated November 15, 2005
- (3) The EALs to be initiated are not necessarily based upon actual radiological exposures to the population at risk, but rather are based upon the potential exposures or specific plant conditions that may pose a threat to the population at risk.
- (4) The release rates and release rate calculations established for the EALs are based upon an assumed isotopic mix at the time of the event and are calculated using the MIDAS computer model. Effluent release rate levels have been identified for both the SITE AREA EMERGENCY and GENERAL EMERGENCY classifications. The monitor readings established for the SITE AREA EMERGENCY are based upon adverse meteorology while

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<b>EMERGENCY CLASSIFICATION SYSTEM</b>	Rev. 29 Page 6 of 10

those established for the GENERAL EMERGENCY are based upon normal meteorological conditions. The limiting case for releases from the Off-Gas Stack, an elevated release with the Standby Gas Treatment System (SBGT) in operation, is Deep Dose Equivalent (whole body dose) rates. All other release paths are assumed to be secured. The limiting case for release from the Turbine Building Ventilation Exhaust Stack, a mixed mode release without the benefit of treatment via SBGT, is Committed Dose Equivalent (thyroid dose) rates. Again, all other release paths are assumed to be secured. Since the projected site boundary dose rates are based upon assumed meteorological conditions, these levels will serve as a warning to calculate projected doses using actual meteorological conditions in order to properly classify the condition.

- (5) High range containment radiation monitor levels have been established for the SITE AREA and GENERAL EMERGENCY classifications. These levels are based on 10% and 20% gap release, respectively. The relationship between percentage gap release and containment monitor response values is delineated in NG-88-0966.
- (6) EALs are conservatively established for the SITE AREA EMERGENCY, and ensure that offsite support agency actions are taken in a timely manner. The EALs for the GENERAL EMERGENCY are established to provide a more realistic basis for evacuation or sheltering decisions.

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**TABLE D-1  
IMMEDIATE ACTION TABULATION**

**NOTIFICATION OF UNUSUAL EVENT**

Class Description

Events are in progress or have occurred which indicate a potential degradation of the level of safety of the plant or indicate a security threat to facility protection has been initiated. No release of radioactive material requiring offsite response or monitoring are expected unless further degradation of safety systems occur.

Purpose

The purpose of this classification is to (1) assure that the first step in any response later found to be necessary has been carried out, (2) bring the operating staff to a state of readiness, and (3) provide systematic handling of unusual events information and decision making.

**NextEra Energy DAEC ACTIONS**

1. Inform local and State authorities and the NRC of the condition, significant actions taken or under way, and any need for assistance.
2. Augment on-shift resources if required as a precautionary measure.
3. Assess and respond.
4. Escalate to a more severe classification, if appropriate.
5. Notify key organizational personnel based upon plant conditions and the character of the event, as appropriate.
6. Establish discussions with NRC, as appropriate.
7. If the abnormal condition becomes more severe, further actions to be taken shall be as prescribed for the emergency classification assigned.

Following restoration from the abnormal conditions, the following actions will be taken:

1. Inform local and state public officials of significant actions taken or under way and any need for assistance, as appropriate.
2. Issue a news statement, as appropriate.

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<b>EMERGENCY CLASSIFICATION SYSTEM</b>	Rev. 29 Page 8 of 10

**TABLE D-1  
IMMEDIATE ACTION TABULATION**

**ALERT**

Class Description

Events are in progress or have occurred which involve an actual or potential substantial degradation of the level of safety of the plant or a security event that involves probable life threatening risk to site personnel or damage to site equipment because of HOSTILE ACTION. Any releases are expected to be limited to small fractions of the EPA Protective Action Guideline exposure levels.

Purpose

The purpose of this classification is to (1) assure that emergency personnel are ready, available to respond if the situation becomes more serious, or to perform confirmatory radiation monitoring if required, and (2) provide offsite authorities current information.

**NextEra Energy DAEC ACTIONS**

1. Promptly inform local and State authorities and the NRC of the condition, status, and reason for emergency as soon as discovered.
2. Augment resources and activate the responders for the Technical Support Center and Operational Support Center. Bring the Emergency Operations Facility, Joint Information Center, and other key personnel to standby status or activation.
3. Assess and respond.
4. Determine need to dispatch onsite and offsite monitoring teams and associated communications.
5. Provide periodic plant status updates to offsite authorities.
6. Provide periodic meteorological assessments to offsite authorities and, if any releases are occurring, dose estimates for actual releases.
7. Escalate to a more severe classification, if appropriate.
8. Establish follow up discussions with the NRC.
9. Issue news statements, as appropriate.
10. If the plant condition becomes more severe, further actions to be taken shall be as prescribed for the emergency classification assigned.

Following restoration of the plant to a stable, safe shutdown condition, the following actions will be taken:

1. Inform local and state authorities of close out or reduction of emergency class.
2. Issue a summary news statement, as appropriate.

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<b>EMERGENCY CLASSIFICATION SYSTEM</b>	Rev. 29 Page 9 of 10

**TABLE D-1  
IMMEDIATE ACTION TABULATION**

**SITE AREA EMERGENCY**

Class Description

Events are in progress or have occurred which involve actual or likely major failures of plant functions needed for protection of the public or HOSTILE ACTION that result in intentional damage or malicious acts; (1) toward site personnel or equipment that could lead to the likely failure of or; (2) prevents effective access to equipment needed for the protection of the public. Any releases are not expected to result in exposure levels which exceed EPA Protective Action Guideline exposure levels beyond the site boundary.

Purpose

The purpose of this classification is to (1) assure that response centers are staffed, (2) assure that monitoring teams are dispatched, (3) assure that personnel required for evacuation of near-site areas are at duty stations if the situation becomes more serious, (4) provide consultation with offsite authorities, and (5) provide updates for the public through offsite authorities.

**NextEra Energy DAEC ACTIONS**

1. Promptly inform local and state authorities and the NRC of the condition, status, and reason for emergency as soon as discovered.
2. Augment resources by activating the responders for the Technical Support Center, Operational Support Center, Emergency Operations Facility and the Joint Information Center.
3. Assess and respond.
4. Dispatch onsite and offsite monitoring teams and associated communications.
5. Dedicate an individual for plant status updates to offsite authorities and periodic press briefings.
6. Make senior technical and management staff onsite available for consultation with the NRC and the State who will contact the DOE and FEMA on a periodic basis.
7. Provide meteorological information and dose estimates to offsite authorities for actual releases.
8. Provide release and dose projections based on available plant conditions and foreseeable contingencies.
9. Initiate communications with industry liaison groups (i.e., INPO) to apprise them of the emergency situation.
10. Prepare to conduct press briefings and issue news statements.
11. Escalate to GENERAL EMERGENCY class, if appropriate.
12. Inform local and state authorities of the closeout or reduction of the emergency class.

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<b>EMERGENCY CLASSIFICATION SYSTEM</b>	Rev. 29 Page 10 of 10

**TABLE D-1  
IMMEDIATE ACTION TABULATION**

**GENERAL EMERGENCY**

Class Description

Events are in progress or have occurred which involve a HOSTILE ACTION that results in an actual loss of physical control of the facility, or releases that can be reasonably expected to exceed EPA Protective Action Guideline exposure levels offsite.

Purpose

The purpose of this classification is to (1) initiate predetermined protective actions for the public, (2) provide continuous assessment of plant information and radiological monitoring measurements taken by licensee and offsite organizations, (3) initiate additional measures as indicated by actual or potential releases, (4) provide consultation with offsite authorities and (5) provide updates for the public through offsite authorities.

**NextEra Energy DAEC ACTIONS**

1. Promptly inform local and state authorities and the NRC of the condition, status, and reason for emergency as soon as discovered.
2. Augment resources by activating the responders for the Technical Support Center, Operational Support Center, Emergency Operations Facility, and the Joint Information Center.
3. Assess and respond.
4. Dispatch onsite and offsite monitoring teams and associated communications.
5. Dedicate an individual for plant status updates to offsite authorities and periodic press briefings.
6. Maintain communications with the NRC. Make senior technical and management staff onsite available for consultation with the NRC and the State on a periodic basis.
7. Provide meteorological information and dose estimates of actual releases to offsite authorities.

8. Provide release and dose projections based on available plant conditions and foreseeable contingencies.
9. Maintain communications with industry liaison groups to ensure they are fully apprised of the status of the event and the potential ramifications.
10. Conduct periodic press briefings and issue news statements to ensure the public is apprised of the status of the event and the actions being taken to minimize its effect upon the public and the environment.
11. Evaluate the resources and capabilities of the overall emergency response organizations and restructuring, as appropriate, to assist in determining, tracking, and assessing the environmental consequences of the event.
12. Achieve stable plant conditions.
13. Investigate the consequences of the accident.

As conditions warrant, the emergency classification will be downgraded and actions specified for the appropriate classification will be continued. Following restoration of the plant to a stable and safe shutdown condition, the following actions shall be taken:

1. Inform local and state authorities of closeout or downgrading of the emergency classification.
2. Issue summary news statement, as appropriate.

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<b>NOTIFICATION METHODS AND PROCEDURES</b>	Rev. 26 Page 1 of 7

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<b>NOTIFICATION METHODS AND PROCEDURES</b>	Rev. 26 Page 3 of 7

## **1.0 PURPOSE**

- (1) This section describes the methods and procedures used by NEE Duane Arnold to transmit emergency information to the Emergency Response Organization, local and state authorities, and subsequently, from such authorities to the public. Details required in the initial and follow-up message are described, along with a description of the types of news statements that will be used to provide the public with information and protective actions.

## **2.0 REQUIREMENTS**

- (1) Methods used to accomplish notification of the Emergency Response Organization include the use of call lists contained in the Emergency Telephone Book, pager and automated telephone callout process.
- (2) The Emergency Telephone Book includes phone numbers and pager numbers (where applicable) of emergency response personnel who may be required to respond to an emergency condition. It also includes the 24-hour telephone numbers of local, state, and federal support agencies including the NRC. The NRC would normally be notified using the NRC ENS Telephone (FTS-2001 System) from the Control Room. The state and counties would normally be notified by a dedicated telecommunications link.

### **2.1 INITIAL NOTIFICATION**

- (1) After declaration of an emergency condition, the Operations Shift Manager will ensure that the following personnel and agencies are notified:
- Linn and Benton Counties
  - State of Iowa
  - NRC Operations Center
  - Emergency Coordinator
  - Emergency Response and Recovery Director
  - NRC Resident Inspectors
- (2) Verification of Notification
- (a) The authenticity of initial notifications provided to Linn and Benton Counties and the State of Iowa do not require verification if the notification is made by the dedicated phone system.
- (b) Local and state agencies notified by commercial communication system (telephone or facsimile) may require verification of the identity and authenticity of the caller and the message received.

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## 2.2 NOTIFICATION AND ACTIVATION OF THE ERO

### (1) NOTIFICATION OF UNUSUAL EVENT

- (a) Activation of emergency facilities (refer to Section H), such as the TSC, the OSC, the EOF, or the JIC will be as directed by the Emergency Coordinator, ER&RD, and JIC Manager, respectively. Normally, these emergency facilities will not be activated for a NOTIFICATION OF UNUSUAL EVENT, but may be, if escalation of the emergency class appears to be imminent.

### (2) ALERT, SITE AREA EMERGENCY, OR GENERAL EMERGENCY

- (a) The Operations Shift Manager, or another member of the shift operating crew, at the direction of the Operations Shift Manager, shall notify onsite personnel by activation of a distinctive tone alarm over the public address system, followed by an announcement over the public address system. Off-duty emergency response personnel will be notified in accordance with the EPIPs describing notification and call out of off-duty personnel. The Emergency Telephone Book contains the telephone numbers and, if applicable, pager numbers of emergency response personnel.
- (b) The onsite Emergency Response Organization personnel shall initially report to the TSC and the OSC at an Alert or higher classification. As personnel arrive at the Operational Support Center, they should select their own nameplate and place it into their response position. The instructions are designated in Emergency Plan Implementing Procedures and cover radiological survey, monitoring, communication, record-keeping, rescue, and emergency repair efforts.
- (c) The Emergency Coordinator will initiate notification of the following emergency response officials and agencies and provide them with additional information, as appropriate, until relieved by the ER&RD:
- Local, state and federal governmental officials and support agency management personnel, as warranted, based upon the severity and potential ramifications of the event,
  - INPO Emergency Response Center.
  - Further information and instructions are provided in the supporting implementing procedures.
- (d) Onsite personnel who staff the EOF and the JIC will report to their facilities at an Alert classification. The ER&RD in conjunction with the JIC Manager will determine when the EOF and JIC will be activated as indicated in the EPIPs.

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### **2.3 INITIAL MESSAGES TO OFFSITE AUTHORITIES**

(1) The initial notification message relayed to offsite authorities will provide the following information:

- Caller identification/location.
- Event classification, EAL number, and time of declaration.
- If radiological release is in progress, type of release and projected duration of release and if airborne release, state whether the release is filtered or unfiltered.
- Wind direction and wind speed.
- Recommended protective actions, if any.
- Assistance, if any, which may be required.

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## **2.4 FOLLOW-UP MESSAGES TO OFFSITE AUTHORITIES**

- (1) After initial notifications have been made from the DAEC to the various offsite organizations, responsibility for communications with offsite agencies will normally be assumed by the TSC until the EOF is staffed.
- (2) The following information will be provided if known and appropriate to the circumstances:
  - Location of incident and name of caller.
  - Date/time of incident.
  - Emergency classification.
  - Type of actual or projected release (airborne, waterborne, surface spill) and estimated duration/impact times, filtered or unfiltered if the release is an airborne release.
  - Estimate of quantity of radioactive material released or being released and the point of release.
  - Chemical and physical form of released material, including estimates of the relative quantities and concentrations of noble gases, iodines, and particulates.
  - Meteorological conditions (wind velocity, direction, temperature, atmospheric stability data, form of precipitation, if any).
  - Actual or projected dose rates and integrated doses at the site boundary; and at about 2, 5, and 10 miles.
  - Estimates of any surface radioactive contamination in the plant, onsite or offsite.
  - Emergency response actions under way.
  - Recommended emergency actions, including protective measures.
  - Requests for any needed onsite support by offsite organizations.
  - Prognosis of event based on plant information.

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## **2.5 METHODS OF PROVIDING PROMPT PUBLIC NOTIFICATION**

- (1) A fixed offsite siren warning system providing an audible alert has been installed within the DAEC Plume Exposure Emergency Planning Zone (EPZ). The EPZ includes subareas and is defined in Section I of this plan, Figure I-1. The audible warning sirens will alert the populace to listen to radios or televisions for detailed information.
- (2) The offsite warning system is designed to alert essentially 100% of the population in the DAEC EPZ. Activation of the system can be accomplished within fifteen minutes of issuance of an advisory from the Linn County Emergency Management Agency, Linn County Sheriff's Office, Benton County Emergency Management Agency, or Benton County Sheriff's Department. Each county can act as a backup to the other.
- (3) In the unlikely event that one or more sirens would fail to activate, the State of Iowa and Linn and Benton Counties maintain a backup Alert and Notification System that will alert the public in affected areas. This system covering the EPZ is achieved through physical route alerting, which is contained in the State of Iowa Radiological Emergency Response Plan and in Linn and Benton County's Radiological Emergency Response Plans and procedures. These plans and procedures are approved by FEMA in accordance with 44CFR350.12 and 14.

## **2.6 METHODS OF PROVIDING PUBLIC INFORMATION CONCERNING PROTECTIVE MEASURES**

- (1) Section 2.5 identifies the methods to be used to notify the public, specifically those in the plume exposure pathway EPZ, of the occurrence of an emergency event. Recommendations regarding protective measures to be implemented for the population at risk will be provided to both county and state officials by the Emergency Coordinator prior to EOF activation, then by the Radiological and EOF Manager. Initial information to expedite the taking of protective measures by the public will be provided by using the Emergency Alert System (EAS).
- (2) Messages to the public generated by a computerized EAS message generation system, will include appropriate aspects of protection; e.g., sheltering, ad hoc respiratory protection or evacuation. Formatted messages are included in the county plans and are the responsibility of Linn and Benton County Emergency Management Agencies.

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Usage Level:

**INFORMATION**

Record the following: Date / Time: \_\_\_\_\_ / \_\_\_\_\_ Initials: \_\_\_\_\_  
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Prepared By: \_\_\_\_\_ / \_\_\_\_\_ Date: \_\_\_\_\_  
Print Signature

**APPROVAL BY EMERGENCY PREPAREDNESS MANAGER**

Approved By \_\_\_\_\_ / \_\_\_\_\_ Date: \_\_\_\_\_  
Print Signature

**APPROVAL BY ORG**

Approved By \_\_\_\_\_ / \_\_\_\_\_ Date: \_\_\_\_\_  
Print Signature

**APPROVAL BY DAEC SITE DIRECTOR**

Approved By \_\_\_\_\_ / \_\_\_\_\_ Date: \_\_\_\_\_  
Print Signature

**APPROVAL BY CORPORATE DIRECTOR OF EMERGENCY PLANNING**

Approved By \_\_\_\_\_ / \_\_\_\_\_ Date: \_\_\_\_\_  
Print Signature

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## **1.0 PURPOSE**

- (1) This section describes the DAEC emergency communications systems and communications links between the NEE Duane Arnold and other response organizations.

## **2.0 REQUIREMENTS**

### **2.1 GENERAL DESCRIPTION OF NEE DUANE ARNOLD COMMUNICATIONS SYSTEMS**

- (1) DAEC Radiological Survey Radio System
- (a) This radio system (Figure F-1) provides base-to-portable communications for conducting radiological surveys throughout the DAEC plume exposure EPZ. The base station is a mobile relay (repeater) type using two VHF frequencies for a single frequency simplex talk-around, or for monitoring short range portable-to-portable communications in the event the base station is inoperative for a short period of time.
- (b) The installation meets the following functional requirements and limitations:
- (i) Installation of the radio base station equipment in a secure area
  - (ii) Wide area coverage for radiological survey communications
- (c) The base station is controlled from the Technical Support Center, and Emergency Operations Facility.
- (i) The portable radios used are the hand-held type.
  - (ii) The base station radios provide the following channels:
    - DAEC "Field Team" Repeater
    - DAEC "Maintenance" Repeater
    - DAEC "Security Call" Simplex
    - DAEC "Operations" UHF repeater
    - Linn County Fire
    - Point to Point
  - (iii) All channels transmit continuous tone-coded squelch.

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- (iv) The hand-held portables are primarily utilized on the VHF "field team" repeater channel and can be used for communication between personnel on foot, mobiles, and the TSC EOF base stations.
- (v) In addition, the DAEC Radiological Survey teams have three vehicles equipped with a 50-watt radio transceiver for communications to the DAEC at distances greater than obtainable with the high power portables.
- (vi) In addition to the attributes listed above the DAEC Security department has the ability to cross patch the frequencies listed above to specific LLEA frequencies if the need should arise during an emergency event. The details surrounding the capabilities of the security radio system are sensitive in nature and are not included in this document.

(2) DAEC (Backup Radiological Survey) Radio System

- (a) This radio system provides backup capability for the VHF radio listed in (1) and provides base-to-portable communications for conducting radiological surveys throughout the DAEC plume exposure EPZ. The backup system is an 800 MHz trunked repeater system. The 800 MHz tower infrastructure is located on a tower at 1000 27<sup>th</sup> Avenue SW, Cedar Rapids, IA 52404. Two RadioPro Console PC-based dispatch radios support this system. One is located in the DAEC Technical Support Center (TSC), and a second identical dispatch radio is located in the Emergency Operations Facility (EOF) at the Alliant Tower.

(3) Plant Operations Radio

- (a) Figure F-2 illustrates the plant operations radio system which consists of a UHF base station connected to an omni-directional antenna. Seven remote control units are associated with this base station, located in the Control Room, Control Room Backpanel, Technical Support Center, Secondary Alarm Station, Security Control Point, and the Central Alarm Station. Hand-held transceivers are used in this system to provide simplex communications within the plant and onsite.

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(4) Point-to-Point Radio System

(a) The DAEC also has a base station licensed for operation in the Police Radio Service on the law enforcement statewide, point-to-point VHF frequency, as illustrated in Figure F-3. The transmitter and one control console are located at the Secondary Alarm Station, the Central Alarm Station, and Security Control Point. This station is for communications with the Iowa Department of Public Safety radio station, Linn County Sheriff's office, Benton County Sheriff's office, and the Cedar Rapids Fire Department, and uses a two-tone sequential signal to alert the latter two public-safety stations. This point-to-point channel is also used by the Linn County Emergency Management and other public safety organizations throughout the state of Iowa.

(5) ERO Notification systems

NEE Duane Arnold has multiple methods to contact designated ERO members in the event of an emergency. All ERO members will be contacted via a phone call to their home or cell phone as needed. All management personnel filling a key ERO duty position will also have one of the following two methods available.

- (a) A pocket-radio paging system, operated and maintained by a local contractor. The system is designed to enable simultaneous contact of such personnel in the event of an emergency.
- (b) Cell phones or other similar devices that are programmed to be automatically contacted in the event of an emergency.

(6) Microwave Facilities

- (a) NEE Duane Arnold, with a group of Iowa utilities, participates in a shared microwave system, a portion of which is illustrated in Figure F-4. The hub of this system is located at the Alliant Tower in Cedar Rapids. A westerly path extends from Cedar Rapids to the DAEC and contains 24 channels used for outdial telephone, which connect the NEE Duane Arnold phone system in Cedar Rapids to the DAEC phone system.
- (b) Additional microwave facilities provide paths east and west from the DAEC through the Alliant Energy substations at Vinton, Dysart, Traer, Wellsburg, and Marshalltown to complete the microwave loop system from Cedar Rapids. This enables a greater degree of reliability since loop switching equipment is installed at all microwave repeaters in the loop. Thus, if one microwave path becomes inoperative, signals will be switched continuing to provide communications to all points around the loop.

(7) Telephone Facilities

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- (a) Figure F-5 illustrates the telephone system. The system is operated and maintained by the Local Telephone Company and the regional provider which serves the Alliant Tower.
- (b) The DAEC PBX is connected to the central office by 20 active Central Office (CO) trunk lines, 48 long distance trunks, 23 duplex dial trunks, and 24 direct dial trunk lines. The PBX also contains six direct-dial tie trunks to the microwave terminal at the DAEC Substation. The PBX currently handles approximately 1,500 telephone stations.
- (c) There are 4 emergency lines with unlisted numbers which connect directly to the Control Room and several offices but do not connect through the PBX.
- (d) There are 6 dedicated telecommunications circuits which bypass the local system switch in the EOF and directly connect to the public switched network provided by a regional communications provider. There are seven data lines used for computer operations which do not connect through the PBX.
- (e) A LAN/Internet system with satellite backup connects the Linn County EOC and Sheriff's office, the Benton County EOC and Sheriff's office, the State of Iowa EOC, the EOF, the TSC, the Simulator, and the Control Room into a private telephone network referred to as the DAEC All-Call. See Figure F-7.
- (f) Redundant fiber connects the DAEC to the central office. This fiber terminates at the DAC Computer Room.
- (g) A Fixed Cell Phone System connects the DAEC Control Room and TSC with the Shellsburg Cell tower via exterior antenna. This phone system has a UPS power supply in the event of a loss of power.
- (h) A Control Room Satellite Phone System connects the DAEC Control Room to a communications satellite. This phone system provides redundancy from the other DAEC phone systems.
- (i) The Emergency Operations Facility has available:
  - (i) Dedicated circuits to the NRC on the Federal Telecommunications system FTS-2001
  - (ii) PBX connectivity to DAEC through dedicated circuitry provided by a local and regional provider
  - (iii) External phone service, separate from DAEC, provided by a separate regional provider

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- (iv) An All-Call System that provides a communication path between the Control Room, Technical Support Center, Simulator, Emergency Operations Facility, Iowa Homeland Security and Emergency Management Division, Benton County and Linn County Emergency Operations Centers, Benton County and Linn County Sheriff 911 Dispatch Centers via LAN/Internet with satellite backup capabilities
  - (j) The NRC ENS and NRC HPN telephones are both installed and functioning. Both telephones are connected to the Federal Telephone System (FTS-2001). The NRC ENS telephones are located in the Control Room, TSC, and EOF which gives those facilities the capability to contact NRC Headquarters in Rockville, MD. The NRC HPN telephones are located in the TSC and EOF and can be used to call regional NRC offices, the NRC Headquarters, or other sites within the region.
- (8) Emergency Microwave Facilities
- (a) Personnel Contacts for Communications Links
    - (i) Table F-1 lists the primary and alternate communication contacts between NEE Duane Arnold emergency facilities and supporting local, State, and Federal agencies. The communications links are those identified in Figures F-1 through F-4. Table F-1 also identifies, by title, the principal and alternate contacts at each end of each communications link.

**2.2 NOTIFICATION OF LOCAL/STATE EMERGENCY RESPONSE NETWORK**

- (1) As mentioned in Section A, both the Linn County and Benton County Sheriff's Communications Centers are staffed on a continuous basis and may be notified from the DAEC and the EOF by the "DAEC All-Call" telephone, conventional telephone, or facsimile transmission of a condition requiring a response. The State Emergency Operations Center may be notified from the DAEC and the EOF by telephone and facsimile through the Iowa Homeland Security and Emergency Management Division, Iowa Department of Public Defense, by radio through the Department of Public Safety Communications, or by use of the "DAEC All-Call" telephone.

**2.3 COMMUNICATIONS WITH CONTIGUOUS LOCAL/STATE AUTHORITIES**

- (1) After the initial notification of an emergency condition and once the Technical Support Center and Emergency Operations Facility are operational, the Technical Support Center will be the principal onsite communications interface while the Emergency Operations Facility will be the principal offsite communications interface. Communications between local and state agencies and NEE

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Duane Arnold emergency facilities may be by telephone (normal and dedicated lines), network, satellite, or radio as discussed in Section 2.2.

**2.4 NEE DUANE ARNOLD COMMUNICATIONS WITH NRC**

- (1) DAEC E-Plan Section E discusses notification methods and procedures. Paragraph 2.1 of this Section F and Figures F-2, F-3, F-4, and F-5 describe the provisions for communicating between NEE Duane Arnold emergency facilities. The NRC will be notified of an emergency condition through the use of the FTS-2001 System (Federal Telecommunications System). The FTS-2001 network provides a separate government network for all essential communications functions to the NRC. Details of the use and operation of the FTS-2001 can be found in the DAEC Emergency Plan Implementing Procedures. (See diagram on Figure F-6)

**2.5 COMMUNICATIONS BETWEEN EOCs AND FIELD ASSESSMENT TEAMS**

- (1) Section 2.1 discusses, and Figures F-1 through F-4 illustrate, the provisions for communicating between each emergency center (NEE Duane Arnold, county and state) and with field assessment teams monitoring the offsite radiological impact of the emergency.

**2.6 ACTIVATING EMERGENCY RESPONSE PERSONNEL**

- (1) DAEC E-Plan Section E discusses notification methods and procedures for offsite authorities. DAEC E-Plan Section A discusses the interrelationships between response organizations and Figure A-1 illustrates activation and notification lines of responsibility. Figures F-1 through F-4 and Paragraph 2.1 of this section describe the systems for notifying response personnel from onsite and offsite Emergency Response Organizations.

**2.7 MEDICAL COMMUNICATIONS**

- (1) Communications with the primary and secondary medical facilities will be accomplished through the use of commercial telephone system. Communications with the ambulance will be accomplished through the use of the Linn County fire frequency radio network.

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**2.8 PERIODIC TESTS OF COMMUNICATIONS SYSTEMS**

- (1) Periodic tests will be conducted to determine the operability of the communications systems discussed in this section. A test (preferably in conjunction with the exercise addressed in DAEC E-Plan Section N) will be performed to test all communications links and notification procedures and the system used to alert the public. The NRC ENS, NRC HPN, and the other telephone lines in the FTS-2001 network will be tested on a monthly basis. The Emergency Response Data System (ERDS) will be tested quarterly by establishing a link with the NRC ERDS system.

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**TABLE F-1**  
**COMMUNICATIONS**  
**PRIMARY AND ALTERNATE CONTACTS**

<u>ORGANIZATION/FACILITY</u>	<u>PRIMARY CONTACT</u>	<u>ALTERNATE CONTACT</u>
<b>1. NEE Duane Arnold</b>		
a. Emergency Operations Facility	Emergency Response & Recovery Director	Radiological & EOF Manager
b. Technical Support Center	Emergency Coordinator	Technical and Engineering Supervisor
c. Operational Support Center	Operational Support Center Supervisor	HP Supervisor
d. Control Room and Alarm Stations	Operations Shift Manager/Supervisor	TSC Operations Liaison
<b>2. LOCAL AGENCIES</b>		
a. Linn County Sheriff's Office and Emergency Management	County Emergency Management Coordinator	Sheriff's Office Communications Center Operator
b. Benton County Sheriff's Office and Emergency Mgmt.	County Emergency Management Coordinator	Sheriff's Office Communications Center Operator
c. Palo Fire Department	Sheriff's Office Communications Center	
d. Mercy Medical Center	Emergency Room Desk	Sheriff's Office Communications Center Operator
e. University of Iowa Hospitals and Clinics	Emergency Room Desk	-----
f. Center Point Ambulance	Sheriff's Office Communications Center Operator	-----
g. Hiawatha Ambulance	Sheriff's Office Communications Center Operator	-----
h. Area Ambulance	Sheriff's Office Communications Center Operator	-----
i. Linn County Sheriff's Rescue	Linn County Sheriff's Dispatcher	-----

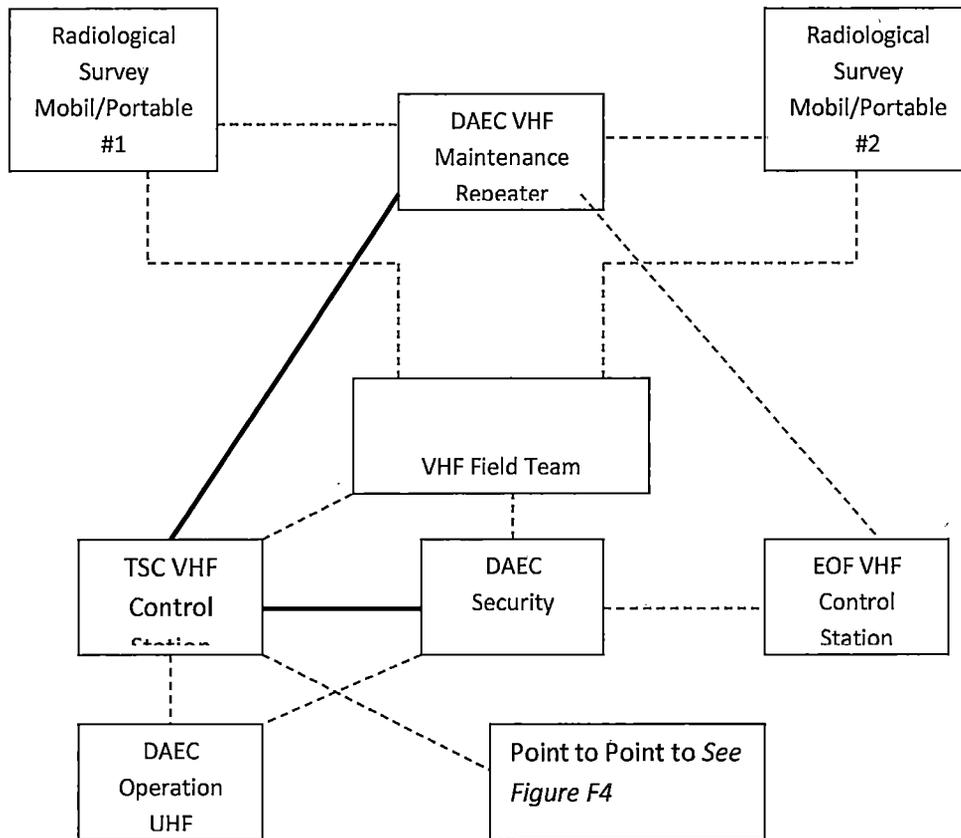
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**TABLE F-1**  
**COMMUNICATIONS**  
**PRIMARY AND ALTERNATE CONTACTS**

<u>ORGANIZATION/FACILITY</u>	<u>PRIMARY CONTACT</u>	<u>ALTERNATE CONTACT</u>
<b>3. STATE AGENCIES</b>		
a. Iowa Homeland Security and Emergency Management Division, Iowa Dept of Public Defense	Iowa Homeland Security and Emergency Management Division Administrator	Department of Public Safety, Communications Station
b. University of Iowa	University Telephone Operator	-----
<b>3. FEDERAL AGENCIES</b>		
a. NRC	Duty Officer (Rockville, Maryland)	NRC Region III Office in Lisle, Illinois
b. Department of Energy	Regional Office in Chicago, Illinois	-----
c. Federal Emergency Management Agency	Contacted by State of Iowa, Iowa Homeland Security and Emergency Mgmt. Division, Iowa Dept of Public Defense	Federal Emergency Management Agency, Region VII, Kansas City, Missouri

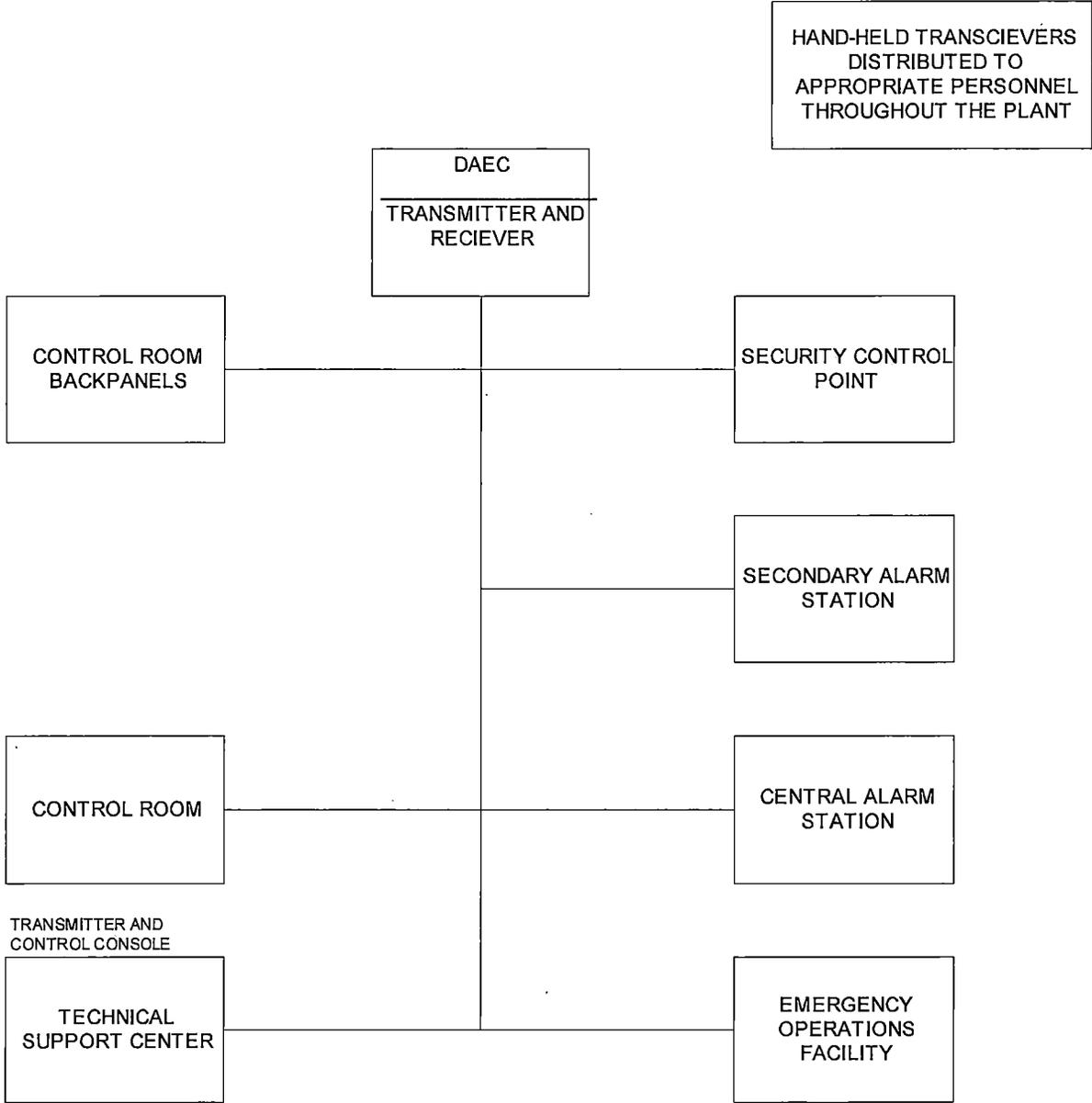
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**FIGURE F-1**  
**DAEC RADIOLOGICAL SURVEY RADIO SYSTEM**



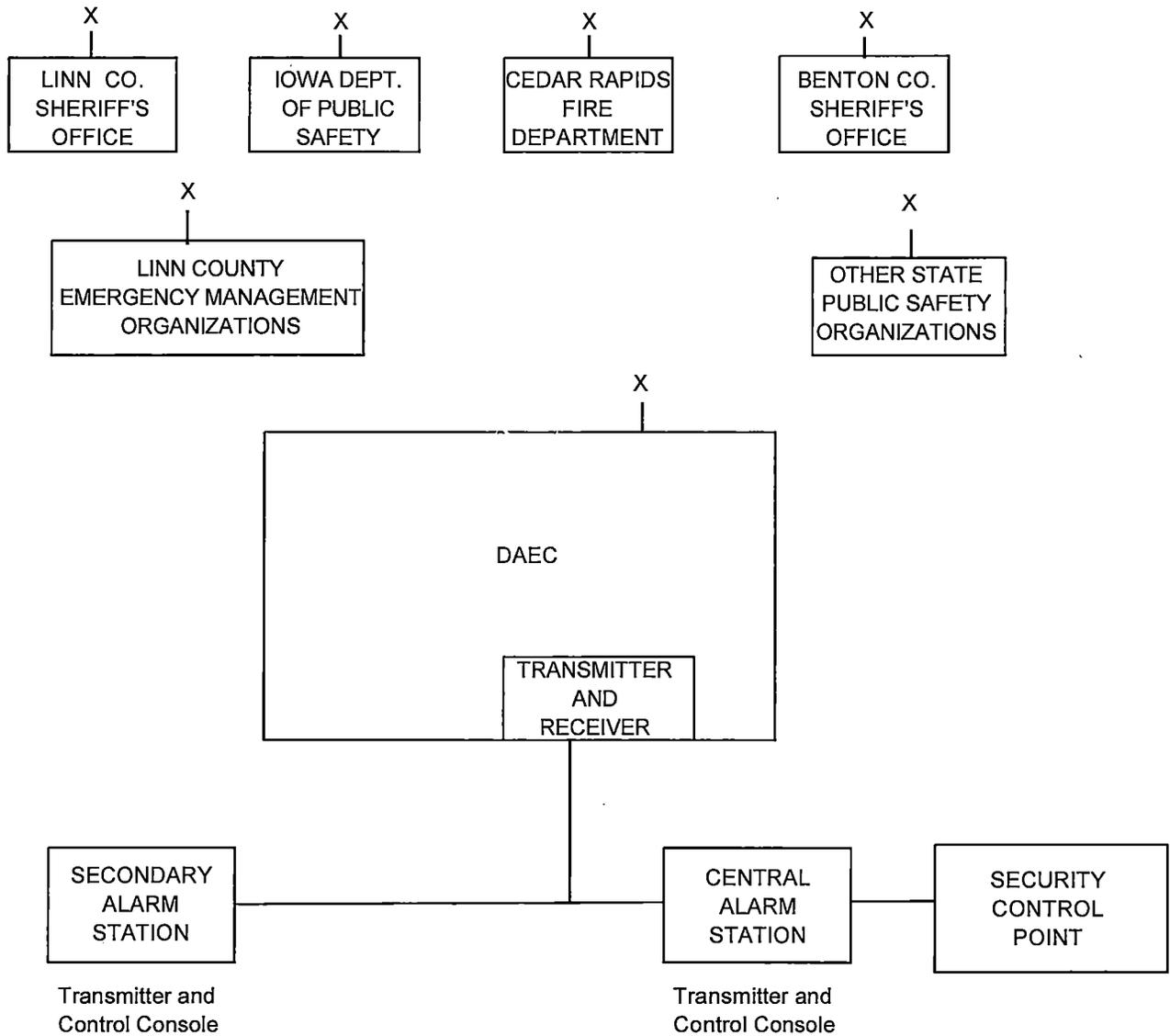
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**FIGURE F-2**  
**PLANT OPERATIONS RADIO SYSTEM**



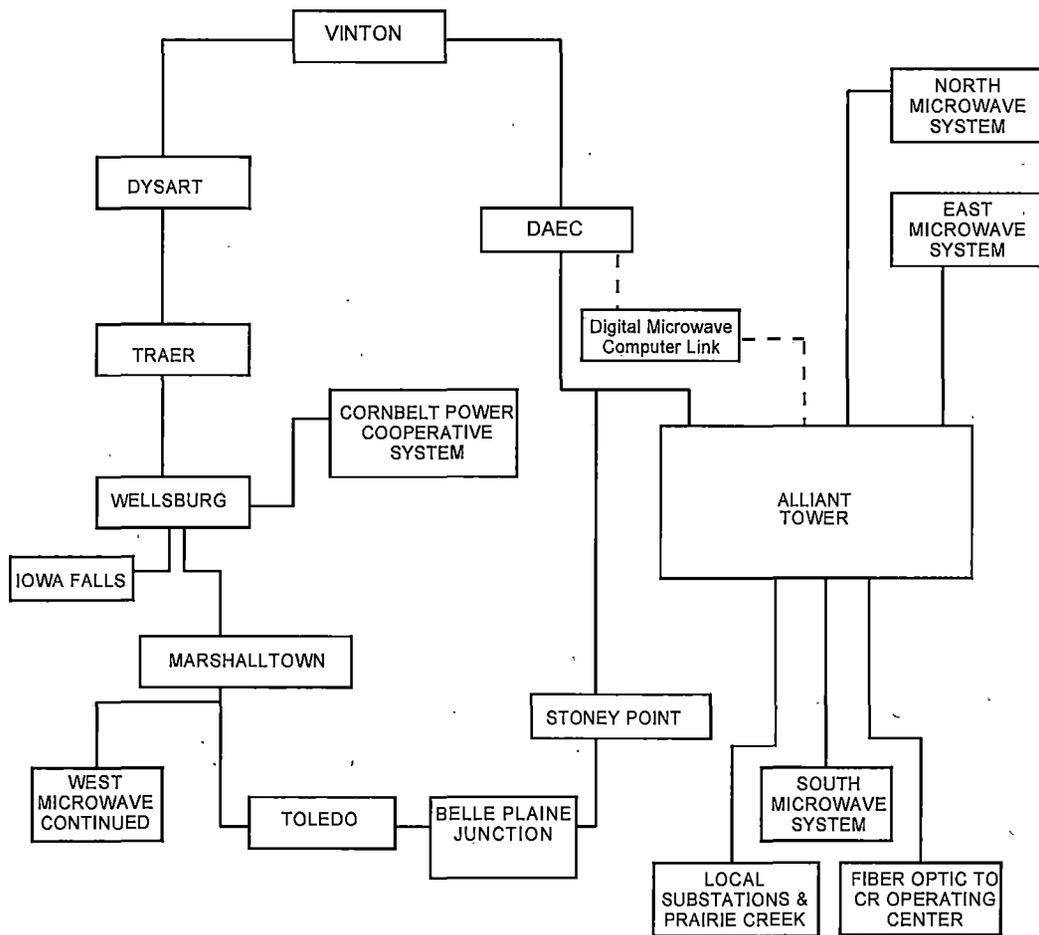
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**FIGURE F-3**  
**POINT-TO-POINT RADIO SYSTEM**



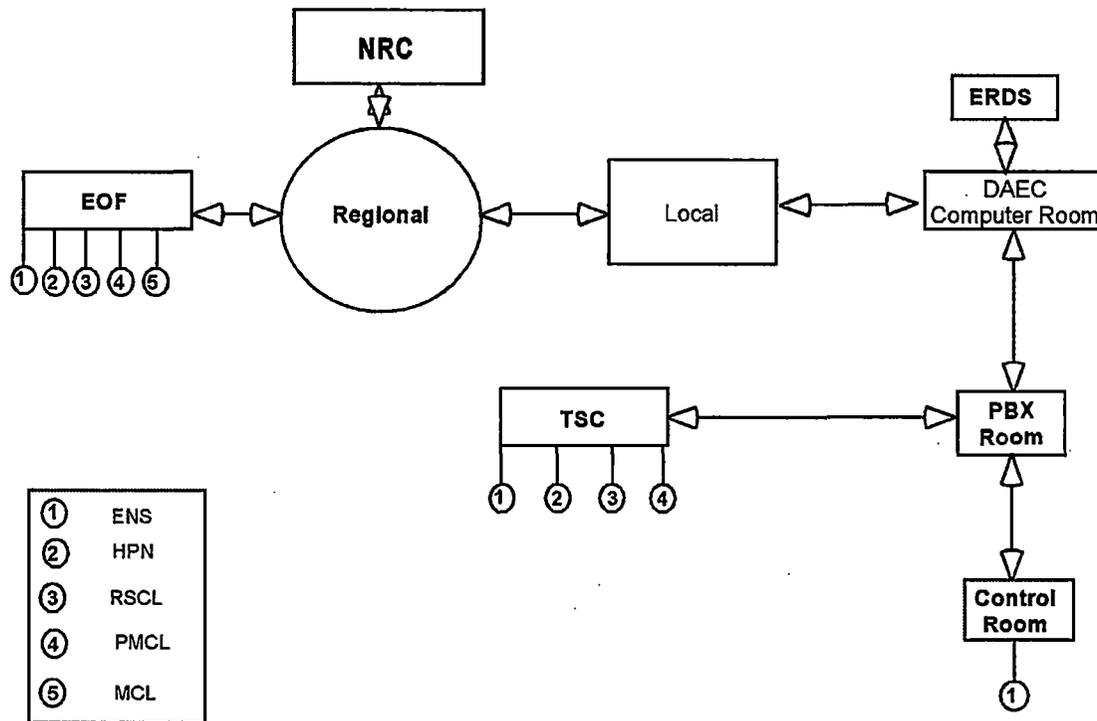
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**FIGURE F-4**  
**MICROWAVE FACILITIES**



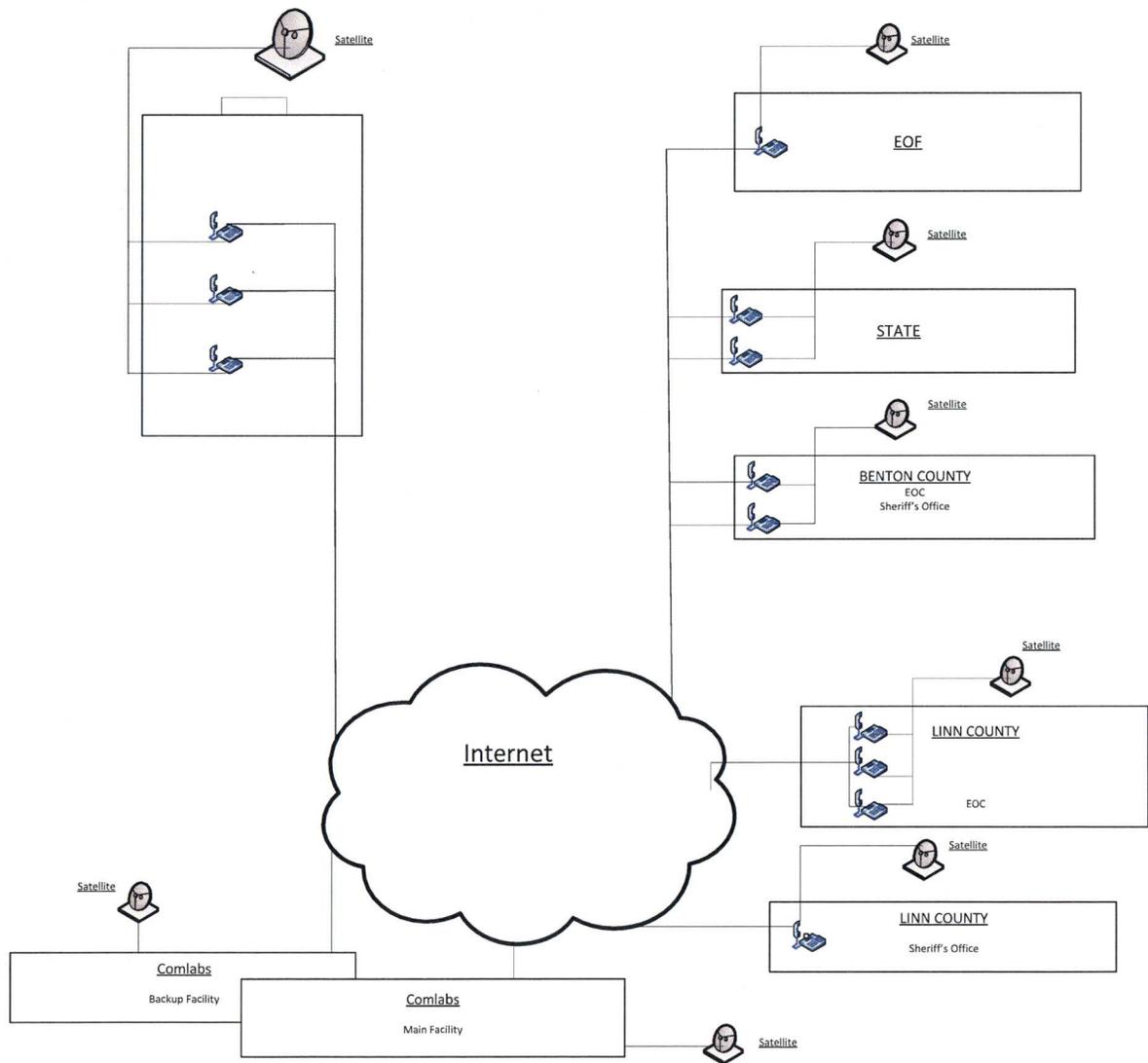


**FIGURE F-6**  
**FEDERAL TELEPHONE SYSTEM (FTS-2001)**



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**FIGURE F-7**  
**ALL-CALL TELEPHONE SYSTEM**





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## **1.0 PURPOSE**

- (1) This section describes the DAEC Emergency Response Organization (ERO) emergency facilities, staffing and activation, and equipment required for support of emergency events.

## **2.0 REQUIREMENTS**

- (1) Emergency response facilities will be activated according to the notification and activation procedures described in the EPIPs. Personnel who are assigned to each facility either appear on call or notification lists used for notification purposes, or by procedure and training, will automatically report to a predesignated area upon declaration of the appropriate Emergency Classification. Each key emergency organization position is assigned a minimum of two qualified persons to ensure complete facility staffing. Whenever possible, three qualified persons will be assigned.
- (2) Support facilities and organizations will be activated as described regardless of the time of day or day of the week. However, it should be recognized that the normal plant staff is only at the site approximately 25% of the time. As a result, as many functions as possible will be assumed by the shift operating crew until support facilities are established and off-duty personnel arrive on site. Sufficient plant staff and corporate personnel will be trained and qualified to staff the appropriate facilities to ensure that they will be established and operational in a timely manner. The Emergency Response Organization is shown in Figure B-1 and also in the Emergency Telephone Book.

### **2.1 TECHNICAL SUPPORT CENTER (TSC)**

- (1) General Description
  - (a) The TSC is located in a facility adjacent to the DAEC Administration Building and is staffed by plant management and technical personnel to provide technical support for Control Room activities. The facility has the capability to transmit and record vital plant data in real time and provides access to as-built plant drawings and other records. Computerized dose projections can be performed from a computer terminal available in the TSC. The program (MIDAS) has real-time access to data from the plant effluent and meteorological monitoring systems. The Safety Parameter Display System (SPDS), which displays critical plant parameters monitored by the process computer, is available in the TSC. Additionally, plant parameters and status information of significance to the event can be transmitted using a VAX computer terminal as well as telephone and radio. Also available is the Emergency Response Data System (ERDS) which displays live-time plant data. The TSC is the main communications link between the plant and the Emergency Operations Facility (EOF). The location and floor plan are shown in Figures H-1 and H-2, respectively. The Control Room is

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designated as the alternate TSC. Communication links between the TSC, Operational Support Center (OSC), Control Room, EOF, and the Nuclear Regulatory Commission (NRC) are described in Section F.

(2) Activation Criteria

- (a) Declaration of an ALERT or higher emergency classification requires activation of the TSC. The Operations Shift Manager (OSM) will authorize initiation of the notification chain according to procedure. Members of the Emergency Response Organization assigned to the TSC will be notified by plant page, extension number, commercial phone, pager or automated telephone system. During off-hours, members of the Emergency Response Organization assigned to the TSC will be contacted by pager and/or commercial telephone. A call list is provided for this purpose. Upon receiving notification of an Emergency Classification which requires activation of the TSC, each individual contacted will immediately report to the TSC to begin activation tasks.
- (b) The TSC is activated at an ALERT, SITE AREA EMERGENCY or GENERAL EMERGENCY. Activation of the TSC for a NOTIFICATION OF UNUSUAL EVENT is at the discretion of the OSM or Emergency Coordinator.

(3) Staffing

- (a) The Emergency Coordinator exercises supervision and direction over the personnel assigned to the TSC. Personnel assigned to the TSC will include: selected members of the plant staff who are knowledgeable in specific functional areas at the DAEC, selected engineering personnel who can assist in providing engineering evaluations, and representatives from the NRC.

(4) Habitability

- (a) The TSC is designed and constructed to provide the shielding necessary to protect occupants from radiation effects from either the reactor core or the plume. An independent ventilation system can be placed in a recirculation mode of operation, enabling air to be continually filtered through both charcoal and HEPA filters. Radiation monitors are provided at the ventilation system intake and within the TSC proper. In the event of radiological releases, portable air sampling equipment is available that will enable periodic checks to be made of airborne radiological conditions.

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## 2.2 OPERATIONAL SUPPORT CENTER (OSC)

### (1) General Description

- (a) The OSC is located in a facility adjacent to the DAEC Administration Building and its floor plan is illustrated in Figure H-1. This center will be used to assemble and dispatch onsite and offsite radiation monitoring teams, and to coordinate in-plant survey efforts, rescue and emergency teams, and personnel who support Control Room emergency activities. This center will be in communication with the TSC and Control Room. Portable environmental sampling and monitoring equipment is stored near this facility to support radiation monitoring teams. This facility provides ready access to evacuation routes.

### (2) Activation Criteria

- (a) Activation of the OSC occurs in a similar fashion to the TSC. Upon declaration of an ALERT or higher emergency classification, the OSM will initiate the notification process. Individuals will either report to the OSC when notified, or will automatically report when an emergency classification is declared that requires OSC activation. Those assigned to the OSC will be notified by plant page, extension number, commercial phone, pager or automated telephone system. During off-hours, individuals assigned to the OSC will be contacted by pager, commercial telephone, or automated telephone system.
- (b) The OSC is activated at an ALERT, SITE AREA EMERGENCY, or GENERAL EMERGENCY is declared. Activation of the OSC for a NOTIFICATION OF UNUSUAL EVENT is at the discretion of the EC.

### (3) Staffing

- (a) The OSC Supervisor exercises overall supervision and direction for all emergency response personnel on site who are not members of the operations shift crew or assigned to other emergency response facilities. Onsite and offsite field radiological monitoring teams, rescue and repair teams, in-plant radiological survey assignments, and communicator assignments are established at the OSC using an Emergency Assignment Tag Board. This method is further described in the EPIPs.

### (4) Habitability

- (a) Sections I and K describe the systems and methods for monitoring radiological conditions in the OSC. Emergency kits at or near the OSC provide respiratory protection, protective clothing, decontamination capabilities, and portable sampling and monitoring devices. First-aid supplies are available from the first aid room. Decontamination is performed at the access control area. Radios, onsite and offsite telephones, and intraplant telephones are available in this center.

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### 2.3 EMERGENCY OPERATIONS FACILITY (EOF)

#### (1) General Description

- (a) The EOF depicted in Figure H-2 is a dedicated facility located on the 15th floor of the Alliant Tower in Cedar Rapids. This facility is operated by Duane Arnold for the continued evaluation and coordination of emergencies having actual or potential offsite consequences. The EOF staff disseminates information to federal, state, and local emergency response organizations and provides a centralized location for representatives from federal, state and local agencies.
- (b) This location has adequate square footage to support the ERO and the EOF. This provides adequate working space for approximately 40 people during normal conditions and 150 people during an emergency. It includes various offices and conference rooms, and provides ready access to the DAEC records, procedures, drawings, etc., that are normally used and maintained in this area.
- (c) The facility is equipped with suitable communications data transmission systems for use during normal and emergency conditions. These systems and equipment provide the following:
  - (i) Dedicated and prioritized communications interconnecting with the TSC, NRC, and local and state networks.
  - (ii) Terminals that can access and display vital plant parameters and radiological and meteorological data.
  - (iii) A fax machine system for transmitting information to the TSC and other offsite agencies, organizations, and companies, as required.

#### (2) Activation Criteria

- (a) Activation of the EOF will be accomplished for any event classified as a SITE AREA or GENERAL EMERGENCY. Activation and staffing of the EOF at an ALERT or lesser classification will be at the direction of the Emergency Response & Recovery Director (ER&RD). The Emergency Coordinator will notify the ER&RD of an emergency situation at DAEC. The ER&RD is responsible for ensuring that personnel are contacted and assigned to fill key EOF functions. Members of the Emergency Response Organization assigned to the EOF will be notified by pager, plant page, or commercial telephone during normal work hours, and by pager and/or commercial telephone, using either call lists or automated telephone system, during non-normal work hours. Key EOF personnel will be directed to report to the EOF when an ALERT is declared and may be placed on standby as directed by the ER&RD. The Emergency Telephone Book identifies each position to be contacted and response times.

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(3) Alternate EOF

- (a) If the Alliant Tower becomes uninhabitable the Alternate EOF will be activated. The Alternate EOF will be located at the Linn County Emergency Management Agency (EMA). Linn EMA is housed in the Kirkwood Community College Facilities and Security Building on the main campus of Kirkwood Community College in Cedar Rapids, IA.

(4) Staffing

- (a) Duane Arnold corporate managers familiar with operating, engineering, licensing, and public relations functions and activities are available to the EOF. Functions to be performed by these key personnel are described in Section B of this plan and in supporting implementing procedures.
- (b) The EOF will provide overall management of the emergency response (including coordination with federal, state and local officials) during Site Area and General Emergency classifications, and, if desired, during lower classifications of emergencies.

(5) Habitability

- (a) The EOF is located at a distance greater than 10 miles from the DAEC; therefore no shielding or specialized ventilation filtration systems are necessary.

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## 2.4 JOINT INFORMATION CENTER (JIC)

### (1) General Description

- (a) The JIC is located on the sixth and fifteenth floors of the Alliant Tower in Cedar Rapids with an auditorium and conference rooms. It has approximately 3,700 square feet and is capable of accommodating 200 news personnel for registration, inquiries, and mass briefings. The JIC functions as the single-point contact for disseminating information to the industry, news media, and public officials. The JIC Manager will use the JIC as his/her headquarters. He/she will ensure that the center is provided with adequate equipment and materials including those listed below:
- (i) A large briefing area with a public address system
  - (ii) A working area for the press
  - (iii) Federal, state, and local government agency work area
  - (iv) Kitchenette and restrooms
  - (v) DAEC media guide and visual aids
- (b) A more detailed description of the JIC, specific equipment capabilities, and media material is provided in Figures H-7 and H-8, "JIC 6th and 15th Floor Plans, typical".
- (c) Should the Cedar Rapids metropolitan area require evacuation, facilities on the main campus of Kirkwood Community College can be used for media briefings and news conferences. JIC spokespersons representing DAEC, Linn and Benton Counties, the State of Iowa, and any Federal agencies, with appropriate support staff will relocate to the College to provide the media with timely and accurate information.

### (2) Activation Criteria

- (a) Activation of the JIC will be accomplished for any event classified as a SITE AREA or GENERAL EMERGENCY. Activation and staffing of the JIC at an ALERT or lesser classification will be at the direction of the JIC Manager. The ER&RD will notify the JIC Manager of an emergency situation at DAEC. The JIC Manager is responsible for ensuring that personnel are contacted and assigned to fill key JIC functions. Members of the Emergency Response Organization assigned to the JIC will be notified by pager, plant page, or commercial telephone during normal work hours, and by pager and/or commercial telephone, using either call lists or automated telephone system, during non-normal work hours. Key JIC personnel will be directed to report to the JIC when an ALERT is declared and may be placed on standby as directed by the JIC Manager. The Emergency Telephone Book identifies each position to be contacted and response times.

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## **2.5 OFFSITE RELOCATION AND ASSEMBLY AREA (ORAA)**

### **(1) General Description**

- (a) The Offsite Relocation and Assembly Area (ORAA) is located in Palo. The directions to the facility are described in Figure H-4. This facility will be staffed by the ORAA Supervisor, security force members, and health physics technicians (or HP trained equivalents). This facility has the capability of providing space in the event of a site evacuation of non-essential personnel from the DAEC. The ORAA provides full decontamination capabilities, and can also function as a staging area to support recovery and re-entry efforts at the DAEC.

### **(2) Activation Criteria**

- (a) Activation and staffing of the ORAA will be accomplished for any event classified as a SITE AREA or GENERAL EMERGENCY. Activation and staffing of the ORAA at an ALERT level will be based upon whether or not a site evacuation has been initiated at the direction of the Emergency Coordinator. The OSC Supervisor, when notified that an evacuation from the site is being conducted, shall contact the ORAA Supervisor and inform him that the ORAA is to be activated. The ORAA Supervisor will then coordinate with the OSC Supervisor to assign three Health Physics technicians (or HP trained equivalents) to assist in the activation of the ORAA.

### **(3) Staffing**

- (a) The ORAA Supervisor exercises supervision and direction over the personnel assigned to the ORAA. Personnel assigned to the ORAA include selected security force members and health physics trained personnel for monitoring and decontamination purposes. The ORAA Supervisor will coordinate with the HP Supervisor if more personnel are needed.

### **(4) Habitability**

- (a) The ORAA does not provide shielding necessary to protect occupants from the plume. If the ORAA, located in Palo, Iowa, is not habitable due to plume effect, the alternate reassembly area will be the Benton County Emergency Worker Monitoring and Decontamination Station located at 701 East A Street in Vinton. It may be necessary for the Emergency Coordinator to select another location based upon input from the Site Radiation Protection Coordinator due to radiological release and meteorological conditions.

## **2.6 ALTERNATIVE FACILITIES**

- (1) If the site is under threat or experiencing a hostile action, the onsite ERO members may be directed to Alternative Facilities. These facilities function as a staging area for augmentation of emergency response staff. Collectively, these facilities have the following characteristics: the capability for communication with the emergency operations facility, control room, and plant security; the capability to perform offsite notifications; and the capability for engineering assessment activities, including damage control team planning and preparation, for use when onsite emergency facilities cannot be safely accessed during hostile action.

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[Reference: 10CFR50 Appendix E Section IV.E.8.d]

## **2.7 STATE HYGIENIC LABORATORY (SHL)**

### **(1) General Description**

- (a) The SHL is located at 2490 Crosspark Road, Coralville, Iowa 52241. This facility provides for the analysis of contaminated or potentially contaminated samples such as water, vegetation, and soil.

### **(2) Activation Criteria**

- (a) The SHL is designated for activation at the discretion of the representative for the Iowa Homeland Security & Emergency Management Division (HSEMD).

### **(3) Staffing**

- (a) The SHL is staffed per the direction of the Iowa Homeland Security & Emergency Management Division (HSEMD).

### **(4) Habitability**

- (a) The SHL is located beyond the 10 mile Emergency Planning Zone (EPZ) from the DAEC. Habitability determinations will be conducted on an as needed basis when potentially contaminated samples or personnel are delivered to the SHL.

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## 2.8 ONSITE MONITORING SYSTEMS

- (1) Meteorological Monitors
  - (a) Wind speed and direction
  - (b) Temperature
- (2) Radiological Monitoring Systems
  - (a) Area Radiation Monitoring System
  - (b) Process Radiation Monitoring System
    - (i) Main Steamline Radiation Monitoring System
    - (ii) Offgas Radiation Monitoring System
      - (a) Pre-treatment Offgas Monitor and Sampler
      - (b) Post-treatment Offgas Monitor and Sampler
    - (iii) Carbon Bed Vault Radiation Monitoring System
    - (iv) Offgas Vent Pipe (Stack) Radiation Monitoring System
    - (v) Refueling Pool Exhaust Radiation Monitoring System
    - (vi) Reactor Bldg. Main Exhaust Radiation Monitoring System
    - (vii) Control Building Air Intake Radiation Monitoring System
    - (viii) Liquid Process Radiation Monitoring System
      - (a) Radwaste Effluent
      - (b) Service Water Effluent
      - (c) Reactor Bldg Closed Cooling Water
      - (d) RHR and Emergency Service Water Effluent
      - (e) RHR and Emergency Service Water Rupture Disc Effluent
    - (ix) KAMAN Extended Range Effluent Monitoring System
      - (a) Offgas Vent Pipe
      - (b) Reactor Building Stacks
      - (c) Turbine Building Vents
- (c) Portable dose rate meters

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- (d) Counting Laboratory Equipment
  - (i) Gamma Spectroscopy
  - (ii) Proportional Counter
  - (iii) Liquid Scintillation Counter
- (e) Whole Body Counter
- (3) Process Monitoring Systems
  - (a) NSSS Instrumentation
    - (i) Rx Vessel Level
    - (ii) Rx Pressure
    - (iii) Rx Temperature
    - (iv) Nuclear Instrumentation
    - (v) Associated Alarms, Annunciators
  - (b) Containment Instrumentation
    - (i) Drywell Temperature
    - (ii) Drywell Pressure
    - (iii) Containment Level
    - (iv) Torus Temperature
    - (v) Torus Pressure
    - (vi) Drywell Sump Pump Timers
    - (vii) Drywell to Torus DP
    - (viii) Torus to Rx Building DP
  - (c) ECCS Instrumentation
    - (i) ECCS Pump Operation
    - (ii) ECCS System Flow Indicators
    - (iii) Isolation Valve Status
    - (iv) HPCI/RCIC Turbine Speed/Minimum Flow
    - (v) Emergency Diesel Generator Operation
    - (vi) SBLC System Operation
    - (vii) Associated Alarms, Annunciators

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(d) System Instrumentation

- (i) SBTG Operation and Flow
- (ii) Standby Filter Unit Operation and Flow
- (iii) Off-Gas System Operation and Flow
- (iv) Rx Building Ventilation Exhaust
- (v) Turbine Building Ventilation Exhaust
- (vi) Feedwater Flow
- (vii) Main Steam Flow
- (viii) Generator Load
- (ix) Valve Status Indicator Lights
- (x) Stack Fan Flow
- (xi) Associated Alarms, Annunciators

(e) Electrical Instrumentation

- (i) RPS Failure Indication
- (ii) Battery Voltage
- (iii) Vital Bus Voltmeter
- (iv) Transformer Output
- (v) Breaker Position Indicators
- (vi) Sub-Station Breaker Positions
- (vii) Associated Alarms, Annunciators

(4) Fire Monitoring Systems

- (a) Smoke (ionization) Detectors
- (b) Rate-of-rise heat Detectors
- (c) Heat Detectors
- (d) Associated Alarms, Annunciators

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## 2.9 METEOROLOGICAL INSTRUMENTATION AND PROCEDURES

- (1) The DAEC Meteorological Instrumentation is used to acquire data for both on-site and off-site monitoring of weather conditions.
- (2) A complete description of the meteorology program is contained in the Updated Final Safety Analysis Report (UFSAR). A capsulated description of the system is given here.
  - (a) The meteorological tower is located 1700 feet south-southeast of the Reactor Building. Both primary and backup instrumentation is provided to measure wind direction, wind speed, and ambient air temperature at 33 feet and 156 feet above the base of the tower. In addition, dewpoint is measured at the 33-foot level and precipitation is measured at the base of the tower. The accuracy's and ranges associated with this instrumentation are discussed in the UFSAR. Calibration of the instruments is performed semiannually. The onsite meteorological measurement program is documented in the UFSAR and the associated Onsite Meteorological Data Supplement.
  - (b) The data gathered by the instrumentation is provided as instantaneous values at 10-second intervals to the Safety Parameter Display System (SPDS). The SPDS screens the data and selects either the primary or the backup instrumentation, as appropriate, under the existing meteorological conditions. The instantaneous values are then processed into one-minute averages and transmitted, along with radiological data, to the atmospheric dispersion and dose assessment model. This allows near real-time predictions of the atmospheric effluent transport and diffusion as well as remote interrogation of the atmospheric measurements and predictions by appropriate organizations. When the Emergency Response Data System (ERDS) link is activated, this data is also picked up and transmitted to the NRC ERDS.
  - (c) The data gathered by the instrumentation is also provided to a hard copy recorder in the Control Room in the form of 30-minute averages as a backup to the data archived by the dose assessment model. For an expanded description of the effluent monitoring system and the dose assessment model, see DAEC Plan "I" section 2.2 "Accident Assessment Capabilities and Resources".

## 2.10 SEISMIC AND HYDROLOGICAL INSTRUMENTATION

- (1) Seismic instrumentation is installed at several locations to detect seismic disturbances. Accelerograph sensors are located in the basement of the Reactor Building, the Refueling Floor, the Intake Structure, Pump House, Recirculation System Piping, Reactor Vessel, and at various other Class I structures. An accelerograph is also installed at a "free field" location to measure soil structure interactions. The accelerograph sensors feed indicating lights and alarms located in the Control Room. The seismic indicators alert operators when predetermined Operating Basis Earthquake (OBE) and Design Basis Earthquake (DBE) values are exceeded.
- (2) The intake structure for plant cooling water employs a level sensing system for Cedar Rapids River level. A level recorder indicates increases or decreases in river level. Additionally, periodic checks of the total flow of the Cedar Rapids River are made at a gauge station in Cedar Rapids.

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### **2.11 CONTROL OF EMERGENCY EQUIPMENT/INSTRUMENTS**

- (1) The operational readiness of emergency equipment and supplies is ensured through a program of routine inventory, calibration, test, and maintenance. Once during each quarter, all emergency kits, emergency equipment, and supplies are inventoried. This inventory includes verification that procedures contained in the kits are the latest revision. Additionally, all portable instruments are verified to have been tested and calibrated as prescribed by DAEC procedures. The general condition of supplies such as batteries, respirators, and liquid containers are inspected for signs of leakage or deterioration.

### **2.12 COMMUNICATION CHECKS**

- (1) The following communication checks will be performed at the specified frequencies:
  - (a) Local and state governments - monthly
  - (b) NRC Headquarters Operations Center - monthly
  - (c) Emergency Response Data System - quarterly
  - (d) Local and state Emergency Operations Centers - annually
- (2) These communication checks will be documented as specified in the EIPs and in Emergency Preparedness Department Procedures.

### **2.13 EMERGENCY KITS**

- (1) DAEC Emergency Plan Appendix 4 identifies the procedures which contain the location and type of emergency kits; i.e., protective equipment, communications equipment, radiological monitoring equipment, and emergency supplies. The Emergency Planning Department procedures establish the inventory quantities of the items listed in the kits.

### **2.14 RECEIPT AND ANALYSIS OF FIELD MONITORING DATA**

- (1) Field monitoring data will be transmitted to the EOF for review and analysis. Prior to the EOF being operational, data will be transmitted to the TSC for review and analysis.

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**TABLE H-1**

**RADIOLOGICAL MONITORING SAMPLING STATION LOCATIONS**

Refer to ODAM Table 5-1

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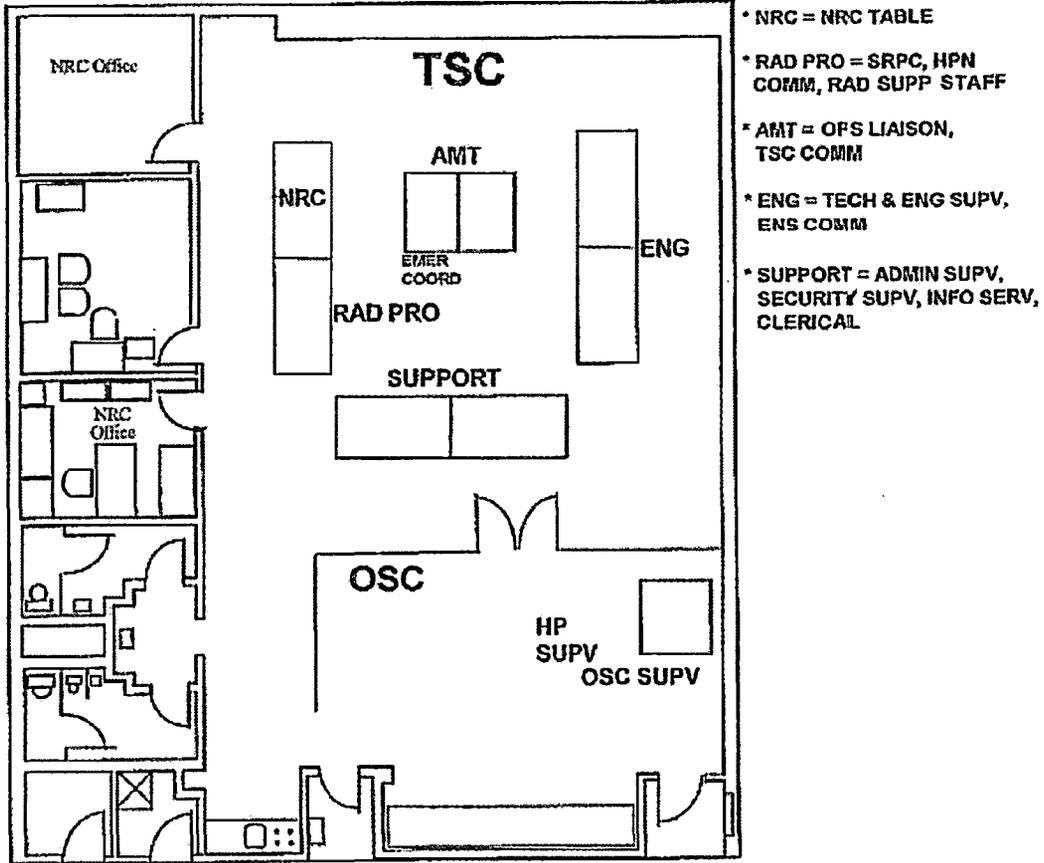
**TABLE H-2**  
**RADIOLOGICAL MONITORING LOCATIONS**

Refer to ODAM Table 5-1

DAEC EMERGENCY PLAN	SECTION 'H'
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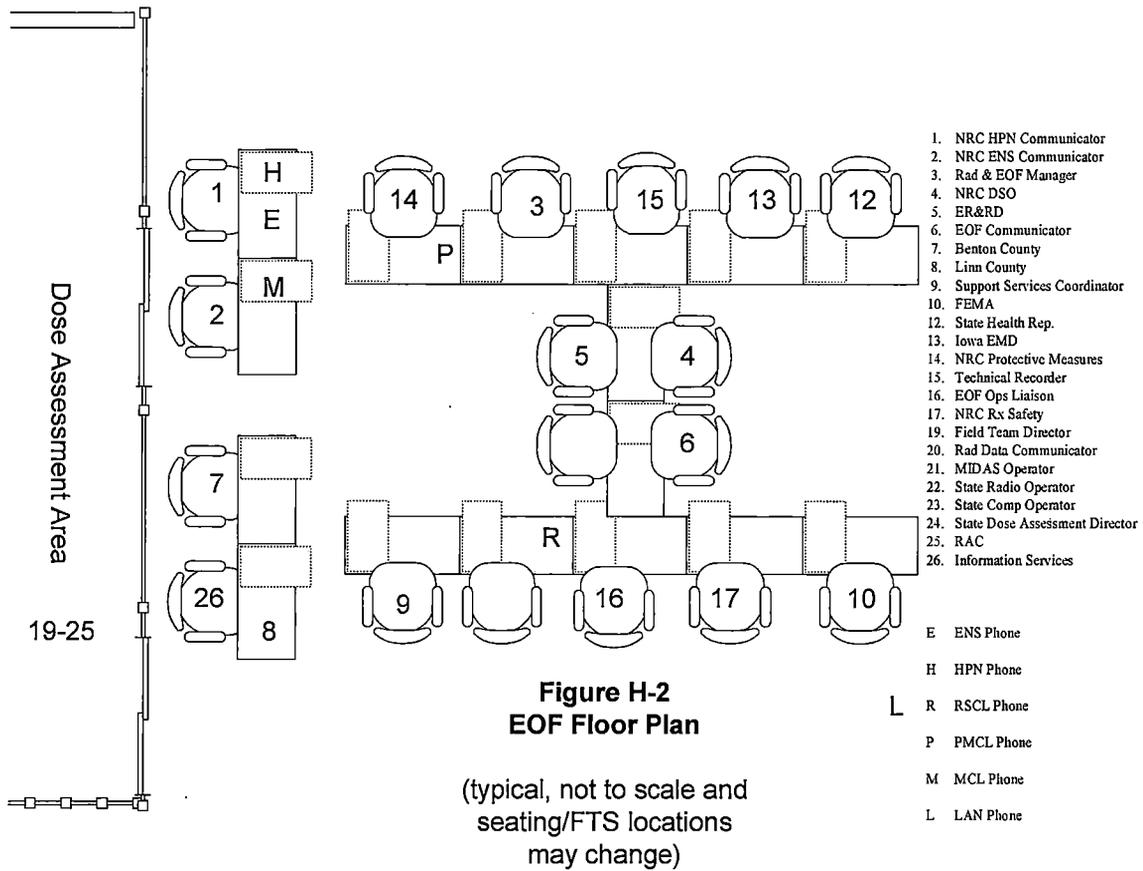
**FIGURE H-1**

**TSC/OSC FLOOR PLAN (Typical)**



**TSC/OSC FLOOR PLAN**

**FIGURE H-2**  
**EOF FLOOR PLAN (Typical)**

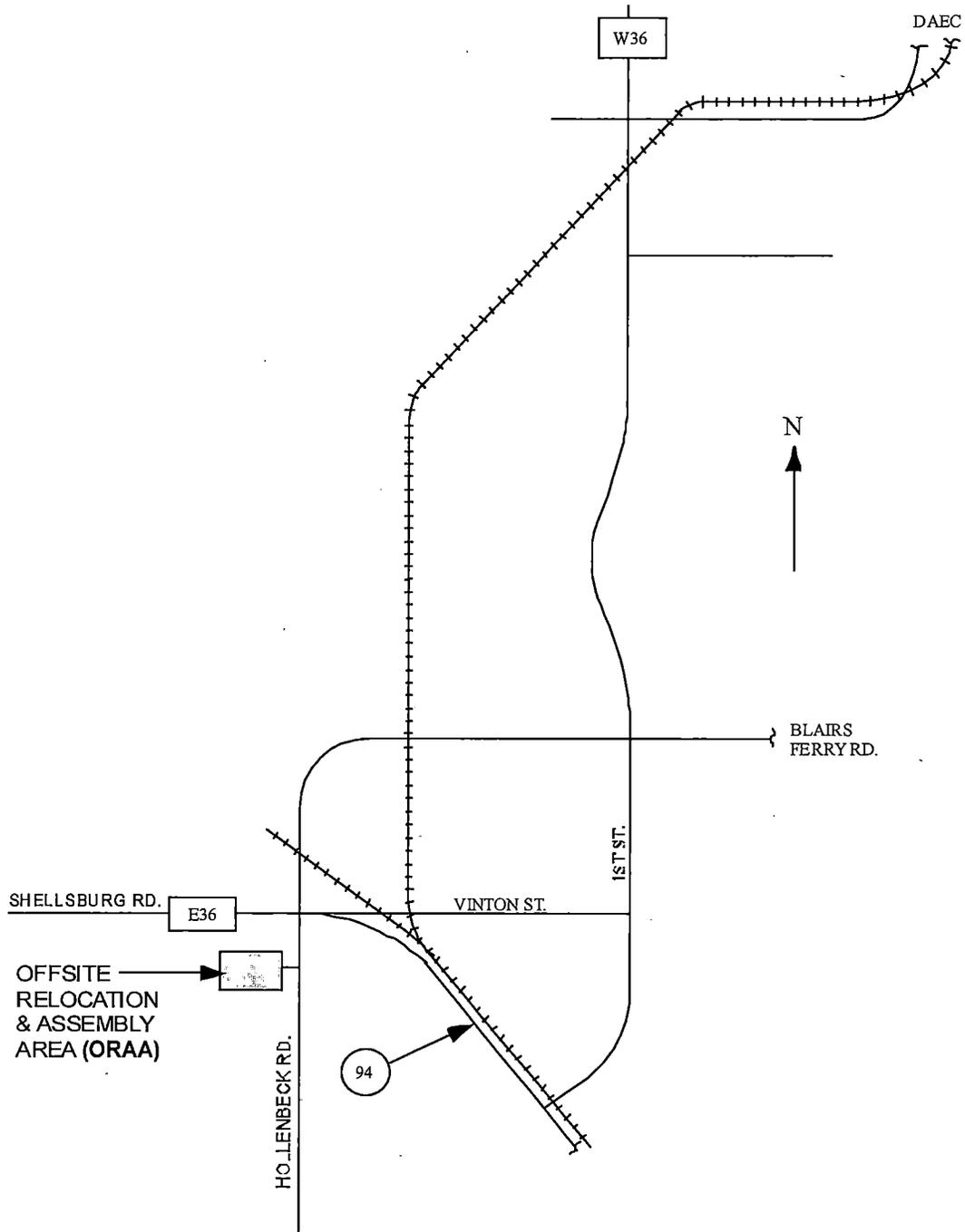


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**FIGURE H-3 (DELETED)**

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**FIGURE H-4**  
**DIRECTIONS TO ORAA**  
**(2800 Hollenbeck Road, Palo, IA 52324)**



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**FIGURE H-5 (DELETED)**

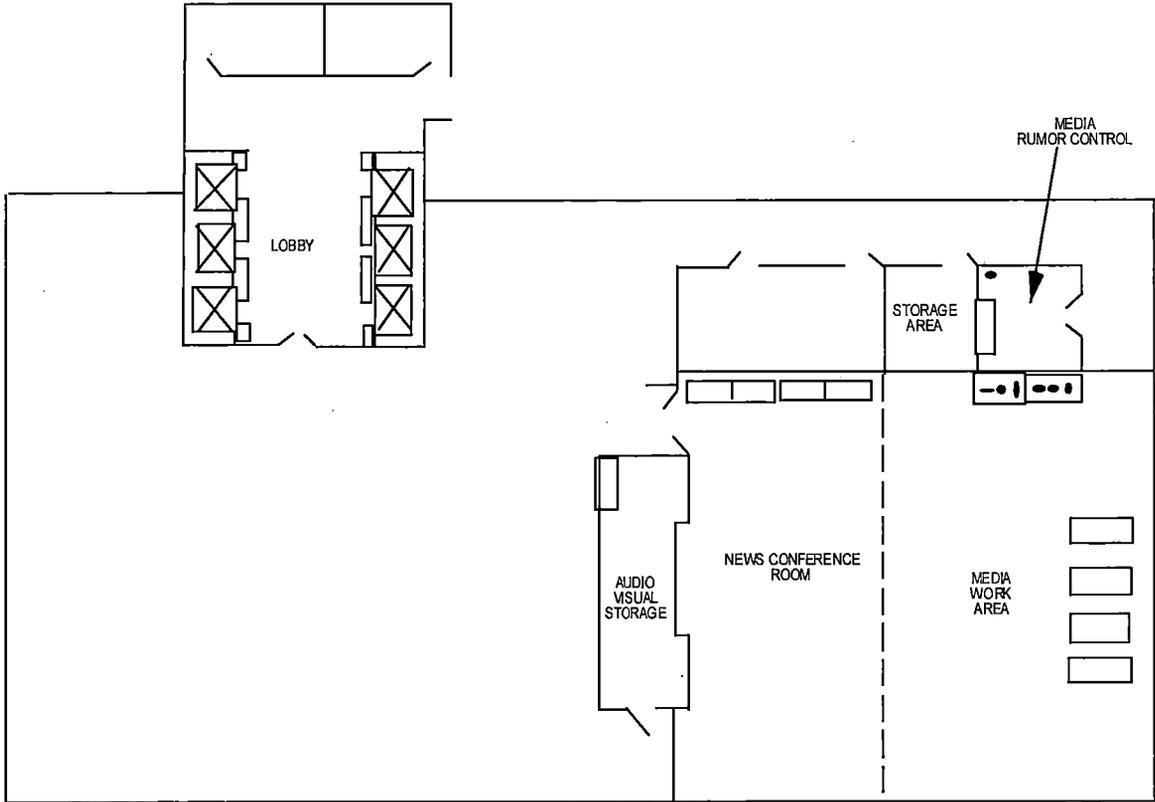
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**FIGURE H-6 (DELETED)**

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**FIGURE H-7**

**JIC 6TH FLOOR PLAN (Typical)**





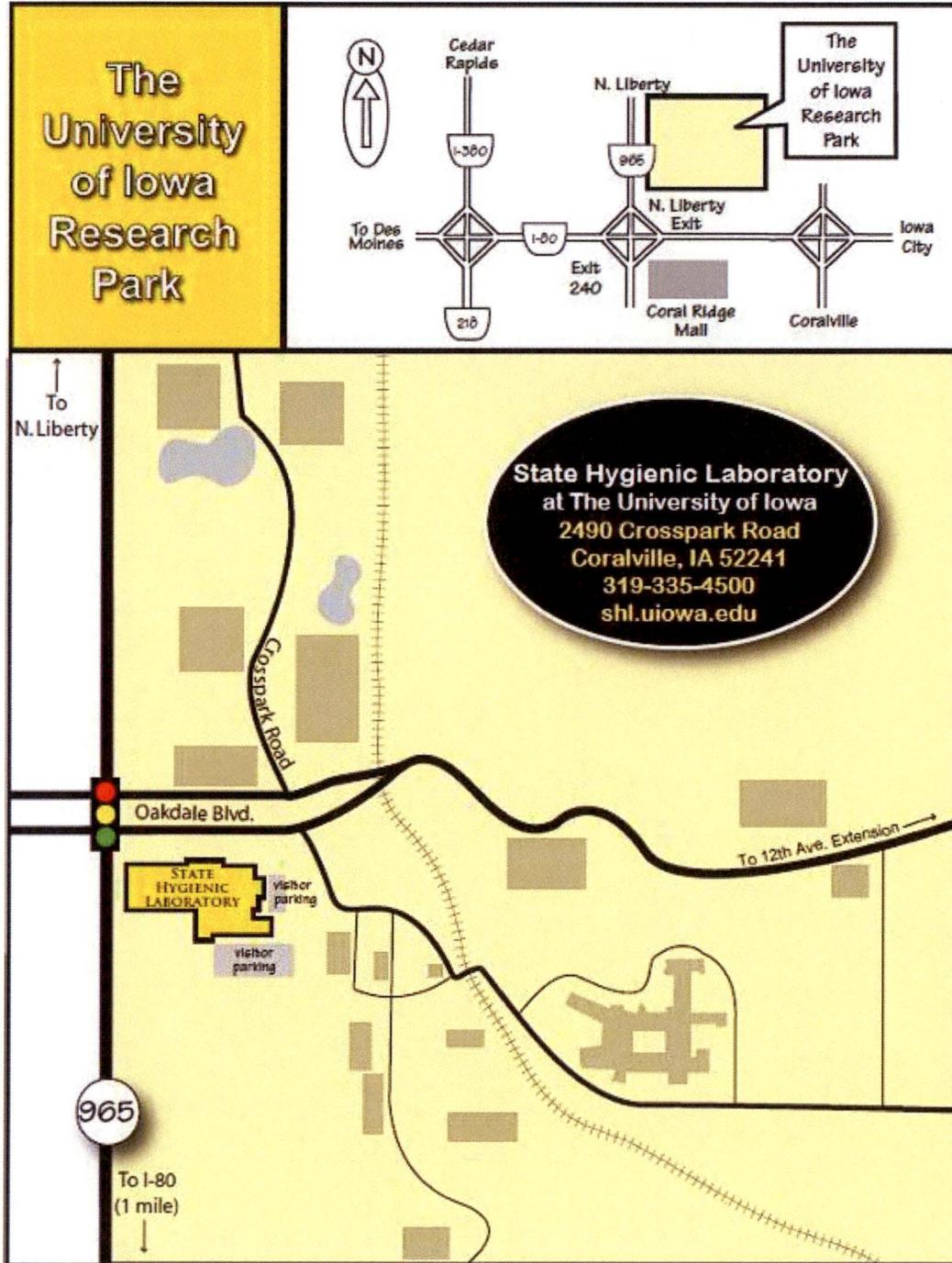
<b>DAEC EMERGENCY PLAN</b>	<b>SECTION 'H'</b>
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**FIGURE H-9 (DELETED)**

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**FIGURE H-10**

**DIRECTIONS TO THE STATE HYGIENIC LAB (SHL)**



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**APPROVAL BY DAEC SITE VICE PRESIDENT**

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**APPROVAL BY CORPORATE DIRECTOR OF EMERGENCY PLANNING**

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<b>DAEC EMERGENCY PLAN</b>	<b>SECTION 'J'</b>
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## **1.0 PURPOSE**

- (1) This section describes the protective actions to be taken for emergency workers and the public based upon the event classification and resulting assessment of plant status and radiological conditions. Guidelines for the choice of protective actions to be implemented are presented, as well as the methods to be used to notify the population at risk of emergency conditions.

## **2.0 REQUIREMENTS**

### **2.1 NOTIFICATION OF ONSITE PERSONNEL**

- (1) Personnel on site within the Protected Area boundary, and personnel on site outside the Protected Area located in the Training Center and the Plant Support Center will be notified of an emergency condition by a distinctive tone-alarm over the public address system, followed by an announcement over the plant page system.
- (2) Security force personnel will be dispatched, as appropriate, to warn any individuals who may be on Duane Arnold property in the vicinity of the plant.

### **2.2 SITE EVACUATION**

- (1) Non-essential personnel will be evacuated from the DAEC to an offsite reassembly area during a SITE AREA or GENERAL EMERGENCY. Evacuation from the site will be by the routes shown in Figure J-1, using personal transportation. The south route will normally be used, unless radiological conditions dictate use of the north route. Security personnel will provide traffic control on site. The detailed provisions for evacuation, relocation, radiological monitoring and decontamination of site personnel are provided in the EPIPs.
- (2) Evacuated personnel will proceed to the Palo Community Center, located in Palo, Iowa, and reassemble for an accountability check and personnel radiological monitoring, if not already accomplished at the DAEC. If the Palo Community Center is not habitable due to plume effects, the alternate reassembly area will be the Benton County Emergency Worker Monitoring and Decontamination Station located at 701 East A Street in Vinton, or at the Emergency Coordinator's discretion.

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**2.3 CONTAMINATION CONTROL OF SITE EVACUEES**

- (1) Security force personnel will ensure that any individuals who may be on company property but outside of the fenced area are advised of the event and escorted off the property. Access will be permitted only to those individuals who are required at the site. If radiological releases have occurred or are in progress, individuals escorted offsite will be surveyed for any radiological contamination prior to being released from company property. In the event that evidence of contamination is found or suspected, the individual will be decontaminated onsite or taken to the Offsite Relocation and Assembly Area (ORAA) or Mercy Medical Center or University of Iowa Hospitals and Clinics for subsequent decontamination and release.
- (2) Where possible, plant employees will be decontaminated in onsite facilities. A full capability exists to conduct decontamination at the Palo Community Center.

**2.4 ACCOUNTABILITY OF ONSITE PERSONNEL**

- (1) For all events that result in activation of the Emergency Response Organization except those classified as NOTIFICATION OF UNUSUAL EVENT, personnel onsite will proceed to their pre-assigned assembly point. In those situations where the number of personnel at the site is significantly in excess of the normal plant staff, information will be disseminated to those additional personnel identifying alternate assembly and accountability locations.
- (2) An accountability check for all personnel who are within the Protected Area will be conducted. The methods used will enable accounting for all individuals onsite at the time of the emergency, ascertain the names of missing individuals within approximately thirty minutes of the start of an emergency, and continuously account for all onsite individuals thereafter.

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## **2.5 RADIOLOGICAL PROTECTION OF ONSITE PERSONNEL**

- (1) Protective measures associated with the use of protective clothing and the use of respiratory protection equipment shall be taken in accordance with existing radiation protection requirements.
- (2) Respiratory protection devices may be required in any situation arising from plant operations where airborne radiological contamination exists. In such cases, the air will be monitored and the need for and type of protective devices will be specified according to the concentration and type of airborne contaminants present. This decision will be made to optimize the total effective dose equivalent. Periodic air samples are routinely taken in selected areas of operations or work activity during normal operations. Air samples will be taken in the OSC, Control Room and TSC, as appropriate, to ensure continued habitability of those areas and to alert the Emergency Coordinator to any changes in the airborne status.
- (3) Protective clothing and respiratory protection equipment are maintained at several locations within the plant. Personnel in the OSC will be dispatched to distribute additional equipment as necessary to the Control Room, TSC, or other plant areas where personnel may be stationed. In the event that sufficient equipment is not available, personnel will be relocated to plant areas where contamination hazards do not exist.
- (4) Where the potential exists for significant exposure to radioiodine, an initial dosage of potassium iodide will be administered. A sufficient quantity of potassium iodide will be kept onsite for this purpose. The use of potassium iodide will be in accordance with EIPs.

## **2.6 ONSITE PROTECTIVE ACTIONS**

- (1) A range of protective actions to protect onsite personnel during a hostile action have been developed to ensure the continued ability to safely shut down the reactor and perform the functions of the emergency plan.

[Reference: 10CFR50 Appendix E Section IV.I]

## **2.7 OFFSITE PROTECTIVE ACTION RECOMMENDATIONS**

- (1) Upon identification and classification of the event, notifications will be made as delineated in Section E. Decisions with respect to sheltering or evacuation of the population at risk, as well as the means of notification, are as prescribed in the Linn County and Benton County Radiological Emergency Response Plans and Emergency Plan Implementing Procedures. Recommendations for protective actions for the public are based upon ensuring that personnel exposures are maintained at or below those identified in the EPA Protective Action Guides, as described in Table K-1.
- (2) Communication systems are available to ensure that the population at risk is notified of protective measures to be taken. These are discussed in Section E.

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- (3) Protective Action Recommendations have been developed using the guidance of NUREG-0654, Supplement 3 which provides an acceptable method to comply with 10 CFR 50, Appendix E, Section IV, paragraph 3 in the use of evacuation time estimates in the formulation of protective action recommendations (PARs) for the plume exposure emergency planning zone, and provides guidance for the provisions of 10 CFR 50.47(b)(10) in the development of a range of PARs.
- (4) NUREG-0654, Supplement 3 also provides guidance to support the information in NUREG-0654/FEMA-REP-1 that the U.S. Nuclear Regulatory Commission finds to be an acceptable method of meeting the requirements in 10 CFR 50.47(b)(7) for the development of a public information program.
- (5) The Protective Action Recommendations have been coordinated with the responsible Offsite Responsible Organizations.

## **2.8 PLUME EPZ PROTECTIVE ACTIONS**

- (1) Offsite protective actions, including sheltering, evacuation and contamination control, will be taken in accordance with the action criteria established in the EPA Protective Action Guides (PAGs) described in Table K-1. The responsibilities associated with implementation of such protective actions are specified in the Linn County and Benton County Radiological Emergency Response Plans. In addition to Table K-1, the following factors will determine the basis for choosing between alternate recommended protective actions:
  - Potential for release based on plant conditions
  - Type of release, (i.e., constant or puff, elevated or ground), filtered or unfiltered
  - Length of release
  - Time required for the plume to reach the population at risk
  - Prevailing meteorological conditions
  - Evacuation time estimates for general and special population distributions are found in Appendix 3 (Evacuation - Time Estimates)
  - Radiological monitoring and environmental sampling results
  - Representative Shielding Factors for Gamma Cloud Sources (Table J-2)
  - Alternate local sheltering facilities
- (2) The Linn County and Benton County Radiological Emergency Response Plans and the State of Iowa Radiological Emergency Response Plan include maps identifying evacuation routes, evacuation subareas, and relocation centers in host counties.

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## **2.9 PLUME EPZ EVACUATION TIME ESTIMATES**

- (1) The DAEC Evacuation Time Estimate for Linn and Benton Counties identifies population distributions, evacuation time estimates, and evacuation routes and is included as Appendix 3. EPZ evacuation routes are as delineated in the Linn County and Benton County Radiological Emergency Response Plans and the State of Iowa Radiological Emergency Response Plan. The permanent population within the DAEC EPZ subareas and within the plume exposure EPZ of DAEC is reflected in Appendix 3. The county plans contain the EPZ evacuation plans.

## **2.10 INGESTION PATHWAY PROTECTIVE ACTIONS**

- (1) Protective action recommendations provided to offsite authorities with regards to the ingestion exposure pathway (50 mile EPZ) will be based upon a number of factors including:
- Type of release
  - Release source
  - Time frame (or accident phase)
  - The results of environmental monitoring and sampling efforts undertaken
- (2) Initial recommendations provided will typically be conservative and based primarily upon projected impacts as opposed to analytical results. Table J-1 provides a summary of the recommended protective actions that may be appropriate for an event at the DAEC. As is evident, these recommendations generally entail restriction of food stuffs and surface drinking water and placing milk animals on stored (non-contaminated) feed. The implementation of protective response options for the ingestion exposure pathway is the responsibility of the State of Iowa and is described in the Iowa Radiological Emergency Response Plan.

## **3.0 ATTACHMENTS**

- (1) TABLE J-1, "SUMMARY OF POSSIBLE OFF-SITE PROTECTIVE ACTIONS TO BE RECOMMENDED OR IMPLEMENTED DURING AN EMERGENCY"
- (2) TABLE J-2, "REPRESENTATIVE SHIELDING FACTORS FROM GAMMA CLOUD SOURCE"
- (3) FIGURE J-1, "SITE EVACUATION ROUTES"
- (4) FIGURE J-2, "DAEC EPZ EVACUATION ROUTES"

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**TABLE J-1  
SUMMARY OF POSSIBLE OFFSITE PROTECTIVE ACTIONS TO BE RECOMMENDED OR  
IMPLEMENTED DURING AN EMERGENCY†**

ACCIDENT PHASE	EXPOSURE PATHWAY	EXAMPLES OF ACTION TO BE RECOMMENDED
<sup>1</sup> EARLY PHASE (0.5 TO 30 hours)*	Inhalation of gases, radioiodines, or particulates	Evacuation, shelter, access control, respiratory protection, prophylaxis (thyroid protection)
	Direct whole body exposure	Evacuation, shelter, access control
<sup>2</sup> INTERMEDIATE PHASE  (30 hours to 30 days)*	Ingestion of milk	Take cows off pasture, prevent cows from drinking surface water, discard contaminated milk or divert it to stored products such as cheese
	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
	Whole body exposure and inhalation	Relocation, decontamination, access control
<sup>3</sup> LATE 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 of material or inhalation of resuspended material	Relocation, access control, decontamination, fixing of contamination, deep plowing

<sup>1</sup> Emergency Phase - Time period of major release and subsequent plume exposure.

<sup>2</sup> Intermediate Phase - Time period of moderate continuous releases with plume exposure and contamination of the environment

<sup>3</sup> Long Term Phase - Recovery period.

\* "Typical" Post-Accident time periods.

† Reference: USEPA "Manual of Protective Action Guides and Protective Actions for Nuclear Incidents," (EPA 400-R-92-001) dated October 1991 with 2nd printing May 1992.

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**TABLE J-2  
REPRESENTATIVE SHIELDING FACTORS FROM GAMMA CLOUD SOURCE\***

Structure of Location	Shielding Factor (a)	Representative Range
Outside	1.0	--
Vehicles	1.0	--
Wood-frame house (b) (no basement)	0.9	--
Basement of wood house	0.6	0.1 to 0.7 (c)
Masonry house (no basement)	0.6	0.4 to 0.7 (c)
Basement of masonry house	0.4	0.1 to 0.5 (c)
Large office or industrial building	0.2	0.1 to 0.3 (c, d)

- (a) The ratio of the interior dose to the exterior dose
- (b) A wood frame house with brick or stone veneer is approximately equivalent to a masonry house for shielding purposes.
- (c) This range is due mainly to different wall materials and different geometrics.
- (d) The reduction factor depends on where the persons are located within the building (e.g., the basement or an inside room).

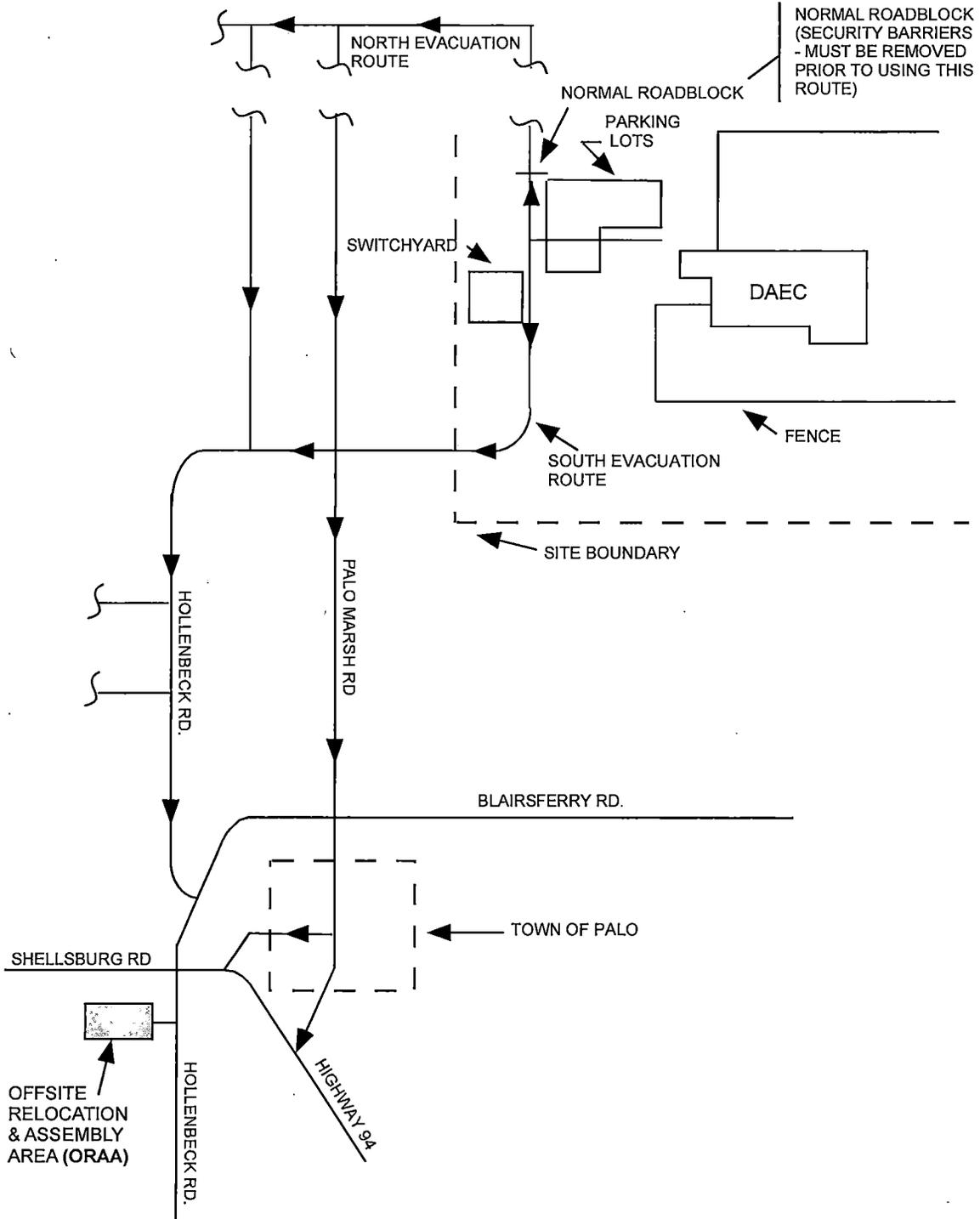
**NOTE:**

- (1) Consideration is limited to gamma radiation since beta and alpha particles cannot penetrate the walls of structures.

\* Manual of Protective Action Guides and Protective Actions for Nuclear Incidents (EPA 400-R-92-001) dated October 1991 with 2nd printing May 1992.

<b>DAEC EMERGENCY PLAN</b>	<b>SECTION 'J'</b>
<b>PROTECTIVE RESPONSE</b>	Rev. 28 Page 10 of 11

**FIGURE J-1  
SITE EVACUATION ROUTES**





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<b>RADIOLOGICAL EXPOSURE CONTROL</b>	Rev. 24 Page 1 of 6

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## **1.0 PURPOSE**

- (1) This section describes the measures to be taken to control radiological exposure to emergency workers and the affected offsite population.

## **2.0 REQUIREMENTS**

### **2.1 EXPOSURE GUIDELINES**

- (1) Conditions may arise wherein consideration will be given to authorizing radiological exposures beyond the normal occupational limit to emergency personnel. These decisions will be based upon the following categories of risk: Emergency Workers.
- (2) To provide the flexibility that may be necessary for emergencies, Duane Arnold will not consider any occupational dose received during the year and will apply the EPA dose limits stipulated in Table 2.2 of EPA 400-R-92-001 (Manual of Protective Action Guides and Protective Actions for Nuclear Incidents) dated October 1991 with 2nd printing May 1992. However, when determining if a worker may respond to an emergency, Duane Arnold will consider prior overexposures and/or planned special exposures when establishing a worker's available emergency dose. Time permitting; NRC Reg Guide 8.35 (Planned Special Exposures) guidelines will be used.
- (3) When emergency action is necessary such that emergency personnel would receive radiological exposures beyond the normal occupational limits, the guidelines as outlined in Table K-1 apply.
- (4) For emergency response actions which might include inhalation of gases or particulates, the emergency dose limit Committed Dose Equivalent to the thyroid is ten times the listed limit in Table K-1. Although respirators and stable iodine should be used where effective to control doses to emergency team workers, Committed Dose Equivalent (thyroid dose) may not be a limiting factor for lifesaving missions.

### **2.2 ONSITE RADIATION PROTECTION PROGRAM**

- (1) Protective measures associated with the use of protective clothing and the use of respiratory protection equipment are discussed in Section J.

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<b>RADIOLOGICAL EXPOSURE CONTROL</b>	Rev. 24 Page 4 of 6

## **2.3 EXPOSURE CONTROL**

### **(1) Exposure Monitoring**

- (a) Duane Arnold will provide exposure monitoring services to determine the doses received by emergency personnel. A health physics technician will supplement each shift operating crew to provide health physics coverage during backshifts, weekends, and holidays when the normal plant staff is not present. In addition, the shift Radwaste operator is available to assist the health physics technician at all times. Added health physics coverage will be provided by trained personnel assigned to the Radiation Protection Department on an as needed basis. An on-shift Non-Certified Operator has been designated to run the MIDAS Dose Projection System until relieved.
- (b) Electronic or self reading dosimeters and permanent record (thermoluminescent) dosimeters will be issued to onsite emergency personnel including those from Duane Arnold, NRC, state, county, and local agencies.

### **(2) Exposure Records**

- (a) Standard radiation protection practices will be followed in preparing and maintaining exposure records. These procedures ensure that dosimeters are read at appropriate frequencies. Separate records will be maintained for Duane Arnold, NRC, local, state, contractor and consultant personnel who arrive at the site. The Site Radiation Protection Coordinator will be responsible for ensuring that personnel are informed of permissible exposure limits and work time within a controlled zone. Following deactivation, each agency participating in onsite recovery activities will be sent the exposure records for its personnel.

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## **2.4 CONTAMINATION CONTROL MEASURES**

- (1) Decontamination Action Levels
  - (a) Standard radiation protection requirements associated with decontamination of areas, equipment, and tools, etc. will be followed. Any modifications to these standards will be as authorized by the Site Radiation Protection Coordinator.
- (2) Decontamination Facilities
  - (a) Decontamination facilities are located at the Access Control Point in the Administration Building. These facilities provide for the decontamination of personnel, supplies, and equipment and for waste disposal. The Low Level Radwaste facility can also provide for the decontamination of supplies, equipment, and for waste disposal.
- (3) Area Access Control
  - (a) Area access will be established and controlled in accordance with standard practices.
- (4) Water and Food Supplies
  - (a) Water and food supplies at the site shall be verified as acceptable for ingestion in those situations where the probability of contamination of food and water exists.
- (5) Area Return to Normal Use
  - (a) The Site Radiation Protection Coordinator will determine when evacuated areas may be returned to normal use. Radiological monitoring of those areas will be accomplished in accordance with standard radiation protection practices.

## **2.5 DECONTAMINATION OF RELOCATED PERSONNEL**

- (1) Personnel will be decontaminated when possible in the onsite decontamination center prior to relocation. Personnel will be taken to the Offsite Relocation and Assembly Area (ORAA) (located at 2800 Hollenbeck Road in Palo) as prescribed in Emergency Plan Implementing Procedures when onsite decontamination is not possible. All personnel will be decontaminated prior to release or reassignment to emergency duties. Necessary equipment and supplies will be available for use at the ORAA, including provisions for extra clothing, decontamination methods suitable for the type of contamination expected, and radioiodine contamination of the skin. Personnel who cannot be decontaminated will be taken to Mercy Medical Center or University of Iowa Hospitals and Clinics for further evaluation.

## **3.0 ATTACHMENTS**

- (1) TABLE K-1, "EPA PROTECTIVE ACTION GUIDELINES"

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**TABLE K-1  
EPA PROTECTIVE ACTION GUIDELINES\***

Protective Action	PAG (projected dose)	Comments
Evacuation (or sheltering <sup>a</sup> )	1-5 rem <sup>b</sup>	Evacuation (or, for some situations, sheltering <sup>a</sup> ) should normally be initiated at 1 rem.
Administration of stable iodine	25 rem <sup>c</sup>	Requires approval of State medical officials.

<sup>a</sup>Sheltering may be the preferred protective action when it will provide protection equal to or greater than evacuation, based on consideration of factors such as source term characteristics, and temporal or other site-specific conditions.

<sup>b</sup>The sum of the effective dose equivalent resulting from exposure to external sources and the committed effective dose equivalent incurred from all significant inhalation pathways during the early phase. Committed dose equivalents to the thyroid and to the skin may be 5 and 50 times larger, respectively.

<sup>c</sup>Committed dose equivalent to the thyroid from radioiodine.

Guidance on Dose Limits for Workers Performing Emergency Services

Dose Limit <sup>a</sup> (rem)	Activity	Condition
5	all	
10	protecting valuable property	lower dose not practicable
25	life saving or protection of large populations	lower dose not practicable
>25	lifesaving or protection of large populations	only on a voluntary basis to persons fully aware of the risks involved

<sup>a</sup>Sum of external effective dose equivalent and committed effective dose equivalent to nonpregnant adults from exposure and intake during an emergency situation. Workers performing services during emergencies should limit dose to the lens of the eye to three times the listed value and doses to any other organ (including skin and body extremities) to ten times the listed value. These limits apply to all doses from an incident, except those received in unrestricted areas as members of the public during the intermediate phase of the incident.

\* EPA 400-R-92-001 - Manual of Protective Action Guides and Protective Actions for Nuclear Incidents, Dated 1991 with 2nd printing May 1992.

**ATTACHMENT 4**

NEXTERA ENERGY DUANE ARNOLD, LLC  
DUANE ARNOLD ENERGY CENTER

LICENSE AMENDMENT REQUEST (TSCR-182)

EMERGENCY RESPONSE ORGANIZATION TASK ANALYSIS

Facility	ERO Position	Position eliminated	Min Staff	Key NRC PI	Position specific procedure tasks	Task Disposition	Justification / Implementing Action	Tasks Transferred to	Additional Tasks added	E-Plan section
TSC	Emergency Coordinator (EC)	No	Yes	Yes	EC1	Receive a detailed turnover from the OSM	Retain			DAEC Plan "A"
					EC2	Verify Notifications and protective action recommendations are completed IAW EPIP 1.2	Retain			DAEC Plan "B"
					EC3	Activate TSC	Retain			DAEC Plan "E"
					EC4	Brief TSC	Retain			DAEC Plan "F"
					EC5	Confer with Security for status of plant accountability	Retain			DAEC Plan "H"
					EC6	Inform ERRD of the operational status of ERO and status of accountability	Retain			DAEC Plan "J"
					EC7	Use EMGs as a tool for prioritizing resources and coordinate integrated response	Retain			DAEC Plan "M"
					EC8	Coordinate accident assessment and analysis efforts	Retain			DAEC Plan "O"
					EC9	Coordinate efforts to return plant to and maintain in a safe, stable condition	Retain			DAEC Plan Appendix 6
					EC10	Periodic updates to Local, State and Federal officials	Retain			
					EC11	Classify / Reclassify event as necessary	Retain			
					EC12	Approve Protective Action Recommendation	Retain			
					EC13	Approve extensions on exposure limits	Retain			
					EC14	Select and prioritize response actions with OSC Supervisor	Retain			
					EC15	Verify Security and Support Supervisor has arranged for continuous ERO coverage	Retain			
					EC16	Update ERRD on plant status, response options in progress, protective action recommendation, etc.	Retain			
					EC17	Consider deviation from normal processes per OP-AA-100-1005	Retain			
					EC18	Reference FLEX-AB-100-1002 for Beyond Design Basis events	Retain			
					EC19	Authorize OSC Supervisor to activate the ORAA	Retain			
					EC20	Authorize the evacuation of non-essential personnel as necessary	Retain			
					EC21	Direct the TSC Ops Liaison to draft forms NOTE-01, 02, 03, 04, 05, and 06 when necessary.	Retain			TSCOPS7
EC21	Direct SRPC to contact Iowa Department of Public Health Hygienic Lab	Retain								
TSC	Site Radiation Protection Coordinator (SRPC)	No	Yes	Yes	SRPC1	Verify the following positions have been staffed: MIDAS Operator, Rad Support Staff, Field Team Director, NRC HPN Communicator	Retain			DAEC Plan "A"
					SRPC2	Report staffing results to the Tech & Eng Supervisor	Retain			DAEC Plan "B"
					SRPC3	At a non-Security related Site or General Emergency, ensure SRDs have been distributed to all TSC, OSC, and Control Room personnel.	Retain			DAEC Plan "H"
					SRPC4	Verify MIDAS is operable.	Retain			DAEC Plan "F"
					SRPC5	Verify Control Room, TSC, and OSC are habitable.	Retain			DAEC Plan "H"
					SRPC6	Verify EC or Tech & Eng Supervisor initiates a PA announcement with regard to facility habitability.	Retain			DAEC Plan "I"
					SRPC7	Ensure that the Control Room is notified of habitability changes requiring a ban on eating or drinking.	Retain			DAEC Plan "K"
					SRPC8	Verify that SPDS is working correctly by switching to the corresponding screens using the following prompts: SPRAD, ARMS, EMS/ALD	Retain			DAEC Plan "O"
					SRPC9	Verify operational status of SBTG Trains, inform MIDAS Operator of status.	Retain			
					SRPC10	Verify reactor trip.	Eliminate	Not required following shutdown and defuel		
					SRPC11	Verify Radiological Support Staff person is acquiring ARM data.	Retain			
					SRPC12	Advise EC of dose extensions.	Retain			
					SRPC13	Evaluate the need to activate the Emergency RWP. If activation is needed, notify the OSC HP Supervisor to activate the RWP.	Retain			
					SRPC14	Ensure the PAR Status Board and Wind Spider are maintained while the TSC is in Command and Control.	Retain			
					SRPC15	If a release is in progress, review MIDAS projections every 15 minutes and issue Protective Action Recommendations (PARs) to the EC, as necessary.	Retain			



					TESUP23	Assign specific engineers to resolve/complete priority task items.	Modify	Other resource needs will be coordinated with Admin Supervisor			
TSC	TSC Ops Supervisor (TSCOPS)	Yes	No	Yes	TSCOPS1	Direct the TSC Accident Management Team, (Rx Eng, TSC Communicator, Technical & Analysis Eng, TSC-Ops Liaison), in assessing plant status, the effectiveness of Control Room actions, prioritization of actions, and development of accident mitigation strategies.	Eliminate	Not required following shutdown and defuel			DAEC Plan "B"
					TSCOPS2	Ensure the Operations Shift Manager (OSM)/Control Room Supervisor (CRS) is kept informed of TSC and OSC activities and is aware of the TSC/OSC priorities, and status of Repair Team activities.	Transfer	This task will be modified to remove Control Room Supervisor and task will be transferred to the TSC Ops Liaison	TSCOL12		DAEC Plan "F"
					TSCOPS3	Ensure the Site Radiation Protection Coordinator and OSC Supervisor are kept informed of Control Room equipment manipulations that could result in changing radiological conditions within the plant so repair teams can be informed of potential changing radiological conditions.	Transfer		TSCOL13		
					TSCOPS4	Provide input and assistance to the Emergency Coordinator and to the OSM/CRS on plant conditions, system status, trends, operations that could affect the plant and accident mitigation strategies	Transfer		TSCOL14		
					TSCOPS5	Ensure adequate Operations support is available for tagouts or other Operator duties.	Transfer		TSCOL15		
					TSCOPS6	Ensure the trending and status boards are kept current by the TSC Accident Management Team.	Eliminate	Not required following shutdown and defuel			
					TSCOPS7	Direct the TSC Ops Liaison to draft forms NOTE-01, 02, 03, 04, 05, and 06 when necessary.	Transfer	EC will perform	EC21		
					TSCOPS8	Direct implementation of SAGs.	Eliminate	Not required following shutdown and defuel			
					TSCOPS9	Assist the TSC with operations concerns during recovery discussions.	Transfer	TSC Ops Liaison will perform	TSCOL11		
TSC	TSC Ops Liaison (TSCOL)	No	Yes	Yes	TSCOL1	Participate as member of the TSC Accident Management Team to assess plant status, the effectiveness of Control Room actions, prioritization of actions, and development of accident mitigation strategies.	Eliminate	Not required following shutdown and defuel			DAEC Plan "B"
					TSCOL2	Provide input to the Tech and Analysis Engineer on EOP/SAG steps with flexibility, containment spray strategies, and containment venting strategies.	Eliminate	Not required following shutdown and defuel			
					TSCOL3	Track Control Room implementation of EOPs and inform the TSC Operations Supervisor when EOPs are entered or exited.	Modify	Inform EC when EOPs are entered or exited			
					TSCOL4	Track TSC implementation of SAGs and inform the TSC Operations Supervisor when SAG paths are entered or exited.	Eliminate	Not required following shutdown and defuel			
					TSCOL5	Monitor plant status and inform the TSC Operations Supervisor and EC when EALs are entered or when a change in the EAL classification is warranted.	Modify	TSC Ops Sup position eliminated			
					TSCOL6	Advise the TSC Operations Supervisor, EC and TSC Engineering Staff on any matter that pertains to the operation of the DAEC.	Modify	TSC Ops Sup position eliminated			
					TSCOL7	Complete NOTE-05 Emergency Notification form	Retain				
					TSCOL8	Give the approved NOTE-05 to the TSC Admin Supervisor to make the notifications to the State and Counties.	Retain				
					TSCOL9	Complete NOTE-04 or NOTE-06 forms as appropriate and make page announcements	Retain				
					TSCOL10	Complete NRC notification form NOTE-03	Retain				
					TSCOL11	Assist the TSC Ops Supervisor during the recovery/reentry phase.	Modify	Assist the EC during recovery/ reentry phase			TSCOPS9
					TSCOL12	Ensure the Operations Shift Manager (OSM)/Control Room Supervisor (CRS) is kept informed of TSC and OSC activities and is aware of the TSC/OSC priorities, and status of Repair Team activities.	Retain	Control Room Supervisor position eliminated			TSCOPS2
					TSCOL13	Ensure the Site Radiation Protection Coordinator and OSC Supervisor are kept informed of Control Room equipment manipulations that could result in changing radiological conditions within the plant so repair teams can be informed of potential changing radiological conditions.	Retain				TSCOPS3
					TSCOL14	Provide input and assistance to the Emergency Coordinator and to the OSM/CRS on plant conditions, system status, trends, operations that could affect the plant and accident mitigation strategies	Retain				TSCOPS4
					TSCOL15	Ensure adequate Operations support is available for tagouts or other Operator duties.	Retain				TSCOPS5
					SSS1	Call out additional Security Force personnel, as required.	Retain				DAEC Plan "A"
					SSS2	Verify the Emergency Accountability Card Readers have been toggled "ON" by the SAS or CAS Operator.	Retain				DAEC Plan "B"
					SSS3	Verify accountability is in progress or completed within 30 minutes of event declaration. Notify EC and TSC Communicator of time complete	Retain				
					SSS4	Prior to dispatching the Security Force Member, obtain concurrence from the HP Supervisor.	Retain				

TSC	Security and Support Supervisor (SSS)	No	No	No	SSS5	Verify the dispatch of Security Force Members to tour the buildings outside the Protected Area, excluding the Training Center and PSC, and direct or escort individuals found to the Plant Access Building (PAB).	Retain									
					SSS6	Assign personnel to maintain access control at the warehouse and Security Ingress	Retain									
					SSS7	Dispatch a Security Force member to retrieve the accountability list at the Plant Support Center and Training Center.	Retain									
					SSS8	Dispatch of a Security Force Member to unlock the Emergency Lockers located in OSC Staging Area.	Retain									
					SSS9	Dispatch of a Security Force Member to verify that the TSC Emergency Ventilation lineup has been completed	Retain									
					SSS10	Coordinate with local law enforcement agency personnel who establish a roadblock at the intersection of Palo Marsh Road and DAEC Road to authorize access to the site.	Retain									
					SSS11	Communicate to the OSC Supervisor the names of any known responders to Fire Scenes, Medical Emergencies, etc	Retain									
					SSS12	Verify the Security Officers posted in the power block have their names posted on the Repair Team Status Board to remind the OSC to keep them informed of radiological conditions	Retain									
					SSS13	Provide the HP Supervisor and/or the Site Radiation Protection Coordinator a list and locations of all personnel posted outside the power block	Retain									
					SSS14	Ensure the Admin Supervisor generates a 24-Hour TSC shift rotation schedule, and provide to the EC.	Retain									
					SSS15	Provide assistance, as required, in completing the required Emergency Response Notifications.	Retain									
					SSS16	Authorize deviations from standard security practices, as appropriate, to promote rapid response by Emergency Response Organization personnel.	Retain									
					SSS17	IF suspension or relaxation of safeguards has been authorized, notify EC or one hour report to NRC and complete the NRC Notification form NOTE-03	Retain									
					SSS18	Coordinate with the HP Supervisor and assign qualified first aid personnel as required.	Retain									
					SSS19	Advise the Site Radiation Protection Coordinator and/or the HP Supervisor when personnel injuries occur.	Retain									
					SSS20	If ORAA is activated, Assign a Security Force Member to the ORAA Supervisor.	Retain									
					SSS21	Provide assistance, as required, in deactivating the Emergency Response Organization including:	Retain									
					TSC	Reactor Engineer (RE)	Yes	No	No	RE1	Track and report to the Emergency Coordinator and the Technical Engineering Supervisor when minimum staffing is attained	Transfer	Transfer to Tech and Engineering Sup	TESUP1		DAEC Plan "B"
										RE2	Determine Spent Fuel Pool Time-to-200 °F data from Daily Plant Status report or calculate per AOP 435, LOSS OF FUEL POOL COOLING Post to ESB or WEB EOC	Transfer	Transfer to Tech and Engineering Sup	TESUP20		
										RE3	Participate as a member of the TSC AMT to continually assess plant status, the effectiveness of control room actions, prioritization of actions, and development of accident mitigation strategies.	Eliminate	Not required following shutdown and defuel			
										RE4	Provide input to the AMT on the shutdown status of the reactor, fuel integrity, offsite release potential, and RPV integrity.	Eliminate	Not required following shutdown and defuel			
RE5	Determine which method will be used to estimate Fuel Damage and log results to Electronic Status Board, if calculated.	Eliminate	Not required following shutdown and defuel													
RE6	Address reactor engineering concerns identified by ERO.	Eliminate	Not required following shutdown and defuel													
RE7	Establish any necessary external vendor contacts for area of expertise.	Eliminate	Not required following shutdown and defuel													
RE8	Assist with any required rod manipulations.	Eliminate	Not required following shutdown and defuel													
RE9	Assist with core thermal limit calculations.	Eliminate	Not required following shutdown and defuel													
RE10	Assist with recovery activities as required.	Eliminate	Not required following shutdown and defuel													
RE11	Recommend nuclear fuel-related priorities during recovery.	Eliminate	Not required following shutdown and defuel													
TSC	Tech and Analysis Engineer (TAE)	Yes	No	No	TAE1	Participate as a member of the TSC Accident Management Team to assess plant status, the effectiveness of Control Room actions, prioritization of actions, and development of accident mitigation strategies.	Eliminate	Not required following shutdown and defuel			DAEC Plan "B"					
					TAE2	Perform trending/forecasting of key plant parameters.	Eliminate	Performed by Tech and Eng Sup	TESUP21							
					TAE3	Reference probabilistic safety assessment studies for insights into expected plant response.	Eliminate	Not required following shutdown and defuel								
					TAE4	Determine availability of key plant systems and equipment used in EOPs/SAGs.	Eliminate	Not required following shutdown and defuel								

					TAE5	Solicit input from the Accident Management Team and the TSC ERO staff as to which SPDS screens would be most useful to display. Recall historical plot trends in order to establish a basis for comparison.	Eliminate	Not required following shutdown and defuel			
					TAE6	Track assigned Point Value Displays.	Eliminate	Not required following shutdown and defuel			
					TAE7	Complete recovery assignments.	Eliminate	Performed by Tech and Eng Sup	TESUP22		
TSC	TSC Communicator (TSCCOM)	No	No	No	TSCCOM1	Verify telephone communications with the Shift Communicator in the Control Room including initiating the conference bridge using the instructions on the phone cord.	Retain				DAEC Plan "B"
					TSCCOM2	Log onto the Electronic Status Board	Retain				
					TSCCOM3	Update the Electronic Status Board with all pertinent information	Retain				
					TSCCOM4	Log all pertinent information acquired from the Control Room onto the log sheet.	Retain				
					TSCCOM5	Maintain the Systems Status Board.	Retain				
					TSCCOM6	Work with the EOF Communicator, Shift Communicator, and JIC Tech Liaison to adequately maintain the ESB and maintain an open communication link	Retain				
					TSCCOM7	Assist the ERO in recovery/reentry efforts as necessary.	Retain				
TSC	I&C/EM Engineer (ICE)	Yes	No	No	ICE1	Standby for any assignments from the Technical & Engineering Supervisor pertaining to plant engineering concerns.	Eliminate	IC Engineer eliminated. All engineering functions performed by Tech and Eng Sup	TESUP		DAEC Plan "B"
					ICE2	Establish any necessary external vendor contacts for area of expertise.	Eliminate	IC Engineer eliminated. All engineering functions performed by Tech and Eng Sup	TESUP		
					ICE3	Assist applicable Supervisors in the OSC with the development of plans to resolve/complete priority task items.	Eliminate	IC Engineer eliminated. All engineering functions performed by Tech and Eng Sup	TESUP		
					ICE4	Participate with other discipline engineers in order to develop plans to resolve/complete priority task	Eliminate	IC Engineer eliminated. All engineering functions performed by Tech and Eng Sup	TESUP		
					ICE5	If necessary complete Emergency Team Data Sheets for assigned priority task items.	Eliminate	IC Engineer eliminated. All engineering functions performed by Tech and Eng Sup	TESUP		
					ICE6	Develop modification packages, including prints, installation instructions and operating limitations.	Eliminate	IC Engineer eliminated. All engineering functions performed by Tech and Eng Sup	TESUP		
					ICE7	Determine availability of existing hardware at the DAEC, or at other facilities.	Eliminate	IC Engineer eliminated. All engineering functions performed by Tech and Eng Sup	TESUP		
					ICE8	Modify DCPs as necessary, to enable use of existing hardware.	Eliminate	IC Engineer eliminated. All engineering functions performed by Tech and Eng Sup	TESUP		
					ICE9	Propose modifications and develop engineering justifications.	Eliminate	IC Engineer eliminated. All engineering functions performed by Tech and Eng Sup	TESUP		
					ICE10	Assist the Technical & Engineering Supervisor in the prioritization of response actions which, if implemented, would mitigate the event, restore the plant to a safe condition, and minimize or stop any radiological release in progress.	Eliminate	IC Engineer eliminated. All engineering functions performed by Tech and Eng Sup	TESUP		
					ICE11	Evaluate trends and provide recommendations to the Technical & Engineering Supervisor, log major activities.	Eliminate	IC Engineer eliminated. All engineering functions performed by Tech and Eng Sup	TESUP		
TSC	Mechanical Engineer (ME)	Yes	No	No	ME1	Standby for any assignments from the Technical & Engineering Supervisor pertaining to plant engineering concerns.	Eliminate	Mech Engineer eliminated. All engineering functions performed by Tech and Eng Sup	TESUP		DAEC Plan "B"
					ME2	Establish any necessary external vendor contacts for area of expertise.	Eliminate	Mech Engineer eliminated. All engineering functions performed by Tech and Eng Sup	TESUP		
					ME3	Assist applicable supervisors in the OSC with the development of plans to resolve/complete priority task items.	Eliminate	Mech Engineer eliminated. All engineering functions performed by Tech and Eng Sup	TESUP		
					ME4	Participate with other discipline engineers in order to develop plans to resolve/complete priority task.	Eliminate	Mech Engineer eliminated. All engineering functions performed by Tech and Eng Sup	TESUP		
					ME5	If necessary, complete Emergency Team Data Sheets for assigned priority task items.	Eliminate	Mech Engineer eliminated. All engineering functions performed by Tech and Eng Sup	TESUP		
					ME6	Develop modification packages, including prints, installation instructions, and operating limitations.	Eliminate	Mech Engineer eliminated. All engineering functions performed by Tech and Eng Sup	TESUP		
					ME7	Determine availability of existing hardware at the DAEC, or at other facilities.	Eliminate	Mech Engineer eliminated. All engineering functions performed by Tech and Eng Sup	TESUP		
					ME8	Modify DCP's as necessary, to enable use of existing hardware.	Eliminate	Mech Engineer eliminated. All engineering functions performed by Tech and Eng Sup	TESUP		
					ME9	Propose modifications and develop engineering justifications.	Eliminate	Mech Engineer eliminated. All engineering functions performed by Tech and Eng Sup	TESUP		
					ME10	Assist the Technical & Engineering Supervisor in the prioritization of response actions which, if implemented, would mitigate the event, restore the plant to a safe condition and minimize or stop any radiological release in progress.	Eliminate	Mech Engineer eliminated. All engineering functions performed by Tech and Eng Sup	TESUP		
					ME11	Evaluate trends and provide recommendations to the Technical & Engineering Supervisor.	Eliminate	Mech Engineer eliminated. All engineering functions performed by Tech and Eng Sup	TESUP		
					ME12	Log major activities.	Eliminate	Mech Engineer eliminated. All engineering functions performed by Tech and Eng Sup	TESUP		
					ENS1	Establish communications with the NRC via the ENS line, remain on the line if requested to by the NRC.	Retain				DAEC Plan "B"

TSC	NRC ENS Communicator (ENS)	No	Yes	No	ENS2	Inform the NRC (including Site Resident Inspectors) of event classification changes by using a completed NOTE-03 form provided by the TSC Ops Liaison.	Retain			DAEC Plan "C"
					ENS3	Maintain the signs relating to EAL severity levels (i.e., Alert, General Emergency, etc.).	Retain			DAEC Plan "H"
					ENS4	Periodically (approximately every 30-minutes) update the NRC on plant conditions.	Retain			
					ENS5	After the EOF has assumed command and control, maintain an open line with the NRC via the ENS line in the TSC.	Retain			
					ENS6	Assist the Tech & Eng Supervisor with recovery/reentry efforts as requested.	Retain			
TSC	Rad Support Staff (RSS)	No	No	No	RSS1	Get out the PAR Status Board and Wind Spider.	Retain			DAEC Plan "B"
					RSS2	Monitor the three TSC radiation monitors (two monitoring the ventilation intake duct work and one in the TSC general area).	Retain			
					RSS3	Obtain Area Radiation Monitor data via SPDS from the Tech & Analysis Engineer. Monitor for trends	Retain			
					RSS4	Maintain the PAR Status Board and Wind Spider at the direction of the SRPC.	Retain			
					RSS5	Alarming ARM data may be provided to the TSC Communicator for display on the Electronic Status Board.	Retain			
					RSS6	Notify the SRPC immediately of any changes in ARM data.	Retain			
					RSS7	Notify the HP Supervisor immediately of any changes in ARM data.	Retain			
					RSS8	Assist the MIDAS Operator with any dose projection operations.	Retain			
					RSS9	Provide any assistance requested by the SRPC.	Retain			
TSC	Admin Supervisor (ADM)	No	No	No	ADM1	Verify clerical support staff are providing necessary support to the TSC staff, assist as necessary.	Retain			DAEC Plan "B"
					ADM2	Use the job aid "Printing Current ETB" to print out Section A of the ETB for the TSC and OSC positions (the alternate method is to use the ETB located in the TSC).	Retain			
					ADM3	Identify personnel names and positions for the current and subsequent shifts.	Retain			
					ADM4	Verify adequate administrative supplies are provided to all TSC staff	Retain			
					ADM5	Upon shifting "Command and Control" to the TSC, ensure that the TSC Communicator has updated the Electronic Status Board to reflect that the TSC has assumed "Command and Control."	Retain			
					ADM6	Log all pertinent information acquired from the EOF and JIC on log sheets.	Retain			
					ADM7	Periodically (approximately every hour or as conditions change) brief the State and Counties of current plant status as directed by the Emergency Coordinator.	Retain			
					ADM8	Inform the Iowa EMD and Linn/Benton County of EAL/PAR declarations or changes by reading the information provided on NOTE-05	Retain			
					ADM9	Establish long term personnel support for the TSC.	Retain			
					ADM10	Assist the Security and Support Supervisor with Recovery/Reentry efforts as requested.	Retain			
TSC	MIDAS Operator (TMIDAS)	No	Yes	No	TMIDAS1	Verify MIDAS program is up and running and ready to perform dose projection runs.	Retain			DAEC Plan "B"
					TMIDAS2	Perform MIDAS dose projection calculations every 15 minutes	Retain			DAEC Plan "H"
					TMIDAS3	Review the output of the MIDAS dose projection and report the results to the Control Room	Retain			
					TMIDAS4	When the SRPC is stationed in the TSC secure from reporting MIDAS results to the Control Room.	Retain			
					TMIDAS5	When notified by the EOF MIDAS Operator, transfer all dose projections activities to the Radiological Assessment Group in the EOF.	Retain			
					TMIDAS6	When transfer of control to the EOF has been completed, the MIDAS Operator may secure and report to the OSC to assist with chemistry activities.	Retain			
TSC	TSC Field Team Director (TSCFT)	No	No	No	TSCFT1	Verify and setup offsite radio communications with the Field Teams	Retain			DAEC Plan "B"
					TSCFT2	Perform radio checks with Field Teams	Retain			DAEC Plan "H"
					TSCFT3	Inform the SRPC/RAC that contact has been established and that you are ready to control the Field Teams.	Retain			
					TSCFT4	Brief Field Teams and Direct Field Teams during the event	Retain			
					TSCFT5	Consider replacing TLD and particulate/iodine filters at environmental sample stations (coordinate with SRPC/RAC).	Retain			

					TSCFT6	Keep the State Field Team Captain apprised of team locations and results, and likewise keep informed of State Field Team locations and results. Coordinate with the RAC.	Retain				
					TSCFT7	Ensure that all rad data boards are kept up to date	Retain				
TSC	NRC HPN Communicator (TSCHPN)	No	No	No	TSCHPN1	Obtain a headset, plug it into your phone, and establish communications with the NRC via the HPN FTS-2001 line. Connect to HPN bridge.	Retain				DAEC Plan "B"
					TSCHPN2	Periodically (approximately every hour), or when directed/requested, provide pertinent information as applicable to the NRC.	Retain				DAEC Plan "H"
					TSCHPN3	Log any pertinent communications with the NRC	Retain				
					TSCHPN4	When relieved of NRC HPN communication responsibilities by the EOF, assist the SRPC in site Radiation Protection efforts as needed.	Retain				
TSC	TSC Clerical (TCLER)	No	No	No	TCLER1	Ensure hallway entrance doors to the TSC/OSC have been closed.	Retain				DAEC Plan "B"
					TCLER2	Set up tables with supplies.	Retain				
					TCLER3	After receiving the NOTE-05 fax from the Control Room (or SIM-CR) switch the fax phone line to 'emergency'.	Retain				
					TCLER4	Distribute wireless mics to ERO in TSC	Retain				
					TCLER5	Make copies of all NOTE-05 (generated in the TSC and faxed to the TSC) and distribute	Retain				
					TCLER6	Fax NOTE-05 to Group 1	Retain				
					TCLER7	If directed by SRPC, copy and distribute ARM data sheets to the OSC HP Supervisor and fax copy to the EOF.	Retain				
TSC	TSC Information Services (TSCIT)	No	No	No	TSCIT1	Verify with the Control Room that ERDS is operating, establishing a link with the NRC. Inform Tech and Eng Supervisor	Retain				DAEC Plan "B"
					TSCIT2	Verify the ERDS data being sent to the NRC is accurate and ensure the TSC-NRC ENS/HPN Communicators have notified the NRC of any changes in the accuracy of the data.	Retain				DAEC Plan "H"
					TSCIT3	Ensure SPDS operational	Retain				
					TSCIT4	Ensure Electronic Status Board (ESB) operational in TSC and Control Room	Retain				
					TSCIT5	Synchronize the master clock in the radio room to the PPC time.	Retain				
					TSCIT6	Assist MIDAS Operator with starting the MIDAS Software and printing from MIDAS.	Retain				
					TSCIT7	In the event of a loss of any, or all, Plant Process Computer (PPC) information, follow EPIP Form EOF-04, SUMMARY OF COMPUTER DATA BACKUP COLLECTION ACTIVITIES, to support the ERO with plant information, as needed.	Retain				
OSC	OSC Supervisor (OSCS)	No	Yes	Yes	OSCS1	Ensure that an individual is assigned as the OSC Communicator.	Retain			MAINT1	DAEC Plan "B"
					OSCS2	Ensure that communications is established with the TSC, Access Control, and Control Room.	Retain			MAINT2	DAEC Plan "H"
					OSCS3	Ensure that the Emergency Event log is being maintained.	Retain			MAINT3	
					OSCS4	Activate the OSC	Retain			MAINT4	
					OSCS5	Assign individual(s) to obtain the following from the Work Control Center and bring to the TSC/OSC area: P&IDS, Ops Procedures	Retain			MAINT5	
					OSCS6	Supervise administration of the Emergency Assignment Staffing Board	Retain			MAINT6	
					OSCS7	If no radiological release is in progress dispatch the ORAA, Onsite and Offsite Field teams for facility set-up and radio communication set-up. Inform the Emergency Coordinator of all teams dispatched.	Retain			MAINT7	
					OSCS8	Coordinate with the Security and Support Supervisor to obtain qualified first aid personnel for rescue activities and medical emergencies, if necessary.	Retain			MAINT8	
					OSCS9	Dispatch emergency repair teams after ensuring they have been briefed by the appropriate Craft Supervisor and the HP Supervisor, or his designee.	Retain			MAINT9	
					OSCS10	Ensure that team status board is updated.	Retain			MAINT10	
					OSCS11	Coordinate with the Security and Support Supervisor and the ORAA Supervisor for evacuation of personnel from site.	Retain				
					OSCS12	Ensure that personnel assembled in the OSC are apprised of the emergency classification, plant problems, and response actions being taken.	Retain				
					OSCS13	Coordinate with the Security and Support Supervisor to ensure that personnel are scheduled to staff all positions.	Retain				

					OSCS14	In conjunction with the Tech and Engineering Supervisor determine actions necessary for recovery/reentry.	Retain				
					OSCS15	Supervise deactivation of the OSC and assure that emergency equipment and supplies are returned to their proper location, are inventoried and tool boxes resealed/lockers locked	Retain				
OSC	HP Supervisor (HPS)	No	No	No	HPS1	Assign experienced Health Physics personnel to supervise and/or assist others performing selected functions.	Retain				DAEC Plan "B"
					HPS2	Ensure inventory instrument checks and zeroing of dosimeters is accomplished.	Retain				DAEC Plan "F"
					HPS3	Remind all TSC/OSC personnel to wear their SRDs.	Retain				DAEC Plan "H"
					HPS4	Contact Shift HP Technician to receive a turnover (phone or face-to-face) covering the current radiological status of the plant.	Retain				
					HPS5	Determine if an onsite radiological problem exists and provide direction to personnel who need to exit the building.	Retain				
					HPS6	Ensure action is initiated to determine, using EPIP Form OSC-12 (External Exposure Limits), the habitability of assembly areas	Retain				
					HPS7	Review "Personal Statement Concerning Incident" forms, evaluate the results of the review, and communicate areas of concern to the OSC Supervisor, Site Radiation Protection Coordinator, and/or Emergency Coordinator, as appropriate.	Retain				
					HPS8	Ensure that team status board is updated.	Retain				
					HPS9	Activate and use the Emergency RWP in Sentinel when directed by the SRPC.	Retain				
					HPS10	Coordinate with the Site Radiation Protection Coordinator (SRPC) to obtain information regarding plant status, problems, response options, significant radiological releases in progress, offsite dose rates, plume location, and meteorological conditions.	Retain				
					HPS11	If fuel failure has occurred or is suspected, coordinate with SRPC to have habitability and in plant field teams conduct airborne radioactivity surveys using silver zeolite filter cartridges.	Retain				
					HPS12	Coordinate the set-up of step-off pads and friskers at appropriate locations to prevent outside contamination from being spread into the OSC/TSC once a release is in progress, or in the event that elevated radiation levels are identified by the field teams.	Retain				
					HPS13	Conduct briefings for Field Radiological Monitoring Teams (onsite and offsite) to verify that Teams are ready to be dispatched and advise the OSC Supervisor.	Retain				
					HPS14	Supervise efforts required to prepare injured/contaminated personnel for transport to offsite medical facilities and assign Health Physics personnel, as required, to accompany personnel to offsite facilities.	Retain				
					HPS15	Provide assistance, as requested, by the TSC Supervisor/OSC Supervisor to provide an HP to accompany repair teams	Retain				
					HPS16	Review the results of radiological monitoring activities and advise the SRPC of problems discovered, unexpected results, etc.	Retain				
					HPS17	Coordinate with ORAA Supervisor and assign 3 Health Physics Techs/Rad Monitors to activate the ORAA and assist in evacuating personnel	Retain				
					HPS18	Identify services required to support ongoing radiological monitoring activities and advise the SRPC of such needs. Schedule HP Technicians as needed	Retain				
					HPS19	Ensure dose is being tracked for all TSC/OSC personnel	Retain				
OSC	OSC Communicator (OSCC)	No	No	No	OSCC1	Get equipment from the Emergency Locker and report to OSC Supervisor	Retain				DAEC Plan "B"
					OSCC2	Monitor completion of the Emergency Assignment Staffing Board.	Retain				
					OSCC3	Relocate Emergency Assignment Staffing Board to the OSC when fully staffed.	Retain				
					OSCC4	Maintain a log using RECOMMENDED LOG ENTRY TOPICS, OSC-04.	Retain				
					OSCC5	Maintain current information and control the Repair Team Status Board	Retain				
	IC/EM Supervisor (MAINT)  Mechanical Supervisor (MAINT)				MAINT1	Report to the OSC Supervisor.	Transfer	Transfer to OSC Supervisor	OSCS		DAEC Plan "B"
					MAINT2	Verify communications are established and functional with your Engineering counterpart in the TSC.	Transfer	Transfer to OSC Supervisor	OSCS		
					MAINT3	Verify Repair Team Personnel requiring Respirator/SCBA glasses have their glasses when needed	Transfer	Transfer to OSC Supervisor	OSCS		

OSC		Yes	No	No	MAINT4	Obtain TSC Diesel Fuel Oil Tank (1T-296) level reading using local indication LG- 3253 (in space provided below) and report this value to the Tech and Engineering Supervisor (MM Supervisor only, N/A for I&C/EM Supervisor).	Transfer	Transfer to OSC Supervisor	OSCS		
					MAINT5	Plan work packages with assistance of engineering personnel in the TSC.	Transfer	Transfer to OSC Supervisor	OSCS		
					MAINT6	Select personnel for repair teams appropriate to the work being conducted. Additional personnel can be obtained from the assembly areas.	Transfer	Transfer to OSC Supervisor	OSCS		
					MAINT7	Prior to repair teams being dispatched, verify a method of communication	Transfer	Transfer to OSC Supervisor	OSCS		
					MAINT8	For Security events, ensure repair teams have received a Security briefing prior to being dispatched.	Transfer	Transfer to OSC Supervisor	OSCS		
					MAINT9	Conduct briefing (Electricians, I&C Technicians, and Mechanics) on work activities and ensure they have received a briefing from the HP Supervisor, if appropriate, prior to their dispatch for repair activities.	Transfer	Transfer to OSC Supervisor	OSCS		
					MAINT10	Ensure team status board is updated	Transfer	Transfer to OSC Supervisor	OSCS		
OSC	Technicians (IC, EM, Mech, HP, Chem)	Yes – One onshift Chem Tech and HP eliminated. One augmenting EM and 4 augmenting HP Techs eliminated	No	No	OSCTECH	Support the OSC as needed for activities related to their craft.	Retain			DAEC Plan "B"	
EOF	Emergency Response and Recovery Director (ERRD)	No	Yes	Yes	ERRD1	Receive a plant status update from the Emergency Coordinator.	Retain				DAEC Plan "A"
					ERRD2	Notify NDDO of event and plant status, if not already notified.	Retain				DAEC Plan "B"
					ERRD3	Discuss activating the JIC with the JIC Manager.	Retain				DAEC Plan "E"
					ERRD4	Activate EOF within one hour of a Site Area or General Emergency	Retain				Appendix 6
					ERRD5	Receive a turnover and assume responsibility for specific functions from the EC	Retain				
					ERRD6	Brief the EOF Staff on the status of the event and inform them of what the EOF is assuming responsibility for.	Retain				
					ERRD7	Ensure that this information gets on the Electronic Status Board and the JIC Manager is informed.	Retain				
					ERRD8	Utilize the Emergency Management Guideline (EMG) as a tool for prioritizing available resources	Retain				
					ERRD9	brief the EOF staff on the current status of the plant and response actions being taken to mitigate the event.	Retain				
					ERRD10	Direct the EOF Staff on applicable tasks to be carried out.	Retain				
					ERRD11	Coordinate accident assessment and analysis efforts to determine the full scope and impact of the emergency.	Retain				
					ERRD12	Coordinate efforts, with the EC, to return the plant to, and maintain it in a safe, stable condition.	Retain				
					ERRD13	Keep NDDO apprised of events at DAEC. Ensure ANI informed of the event as required.	Retain				
					ERRD14	Classify/Reclassify the event as necessary	Retain				
					ERRD15	Approve Protective Action Recommendations	Retain				
					ERRD16	Approve extensions on exposure limits for emergency workers. This responsibility may not be delegated.	Retain				
					ERRD17	Verify that the Support Services Coordinator has arranged for continuous coverage by ERO personnel	Retain				
					ERRD18	Prepare and brief the NRC Site team	Retain				
					ERRD19	Coordinate with the EC to initiate recovery planning	Retain				
					ERRD20	Deactivate emergency response centers.	Retain				
					ERRD21	Direct the Technical Recorder to prepare a written summary upon downgrading from an ALERT or greater	Retain				
					EOFOL1	Receive a briefing from the TSC Ops Liaison to ensure you are aware of the current plant status.	Retain			DAEC Plan "B"	
					EOFOL2	Startup PI - Based SPDS using EPIP Form EOF-13 and monitor plant status	Retain				
					EOFOL3	Track control room implementation of EOPs and inform the ER&RD when EOPs are entered or exited	Retain				
					EOFOL4	Track TSC implementation of SAGs and inform the ER&RD when SAG paths are entered or exited.	Eliminate	Not required following shutdown and defuel			
					EOFOL5	Complete offsite notification form NOTE-05	Retain				

EOF	EOF Ops Liaison (EOFOL)	No	Yes	Yes	EOFOL6	Complete NOTE-03 NRC Form 361, Reactor Plant Event Notification Worksheet.	Retain				
					EOFOL7	Give the NOTE-03 to the HPN Communicator to notify the NRC	Retain				
					EOFOL8	Make sure the DAEC Plant Page announcement is made in accordance with NOTE-06 (performed by TSC).	Retain				
					EOFOL9	Advise the ER&RD and Rad & EOF Manager on any matter that pertains to the operation of the DAEC.	Retain				
					EOFOL10	Inform the RAC of the status of the Standby Gas Treatment System. Provide updates when the status changes.	Retain				
					EOFOL11	Assist the ER&RD during the recovery/reentry phase.	Retain				
EOF	Rad and EOF Manager (REM)	No	Yes	Yes	REM1	Ensure EOF personnel have filled positions of Field Team Director, MIDAS Operator, RAC, Rad Data Plotter, HPN Communicator.	Retain				DAEC Plan "B"
					REM2	Verify from RAC that EOF has dose projection capability.	Retain				DAEC Plan "H"
					REM3	Verify that all EOF and Field Team radios can both transmit and receive communications.	Retain				DAEC Plan "I"
					REM4	Verify EOF ready to assume Command & Control of the Offsite Field Teams.	Retain				
					REM5	Complete checklist to support command and control transfer to the EOF.	Retain				
					REM6	Brief the RAC of the status of Rad Pro issues.	Retain				
					REM7	Verify ERDS and SPDS are operational in the EOF.	Retain				
					REM8	When the EOF is declared Activated and has taken command and control, direct the EOF Communicator to display the status on the Electronic Status Board including other pertinent information throughout the event	Retain				
					REM9	Periodically brief the State & Counties, via the All-Call Phone, of the status of the emergency.	Retain				
					REM10	Work with the RAC to ensure that Field Teams are periodically briefed of the status of the emergency.	Retain				
					REM11	Work with the RAC to ensure that the PAR Boards are kept up to date.	Retain				
					REM12	Work with the RAC to continually monitor potential PAR changes based upon:	Retain				
					REM13	Assist the EOF Ops Liaison in looking ahead for changes in EALs	Retain				
					REM14	Keep the ER&RD apprised of ongoing status.	Retain				
					REM15	If/when subarea 23 is evacuated, notify JIC to relocate to alternate location.	Retain				
					REM16	Using the approved NOTE-05 (peer check prior to contact), contact the State & Counties via the All-Call phone and notify the State & Counties	Retain				
					REM17	Ensure that the HPN Communicator informs the NRC of the EAL change, via the ENS line.	Retain				
					REM18	Have the Messenger fax NOTE-05 to the State/Counties	Retain				
					REM19	Upon arrival of the State Field Teams the Rad & EOF Manager and RAC should brief the Team leader	Retain				
					REM20	Coordinate with the ER&RD, RAC, & SRPC to develop implement a Recovery/Reentry Plan	Retain				
EOF	Radiological Assessment Coordinator (RAC)	No	Yes	No	RAC1	Verify the following positions are filled: Field Team Director, MIDAS Operator, Rad Data Plotter	Retain				DAEC Plan "A"
					RAC2	Verify dose projection capability	Retain				DAEC Plan "B"
					RAC3	Verify Field Team radio functionality and Field Team communications established	Retain				DAEC Plan "I"
					RAC4	Verify EOF ready to assume Command & Control of the Offsite Field Teams	Retain				Appendix 6
					RAC5	Notify the SRPC once the EOF is ready to assume MIDAS projections and Command and Control of the Offsite Field Teams	Retain				
					RAC6	Brief the 'Glasshouse' of the status of Rad Pro issues.	Retain				
					RAC7	When ready to assume responsibility for Dose Projections and Field Teams, notify the Rad & EOF Manager and coordinate with the SPRC at the TSC	Retain				
					RAC8	When directed to assume responsibility for Dose Projections, have the EOF MIDAS Operator coordinate with the TSC MIDAS Operator to ensure that transfer is accomplished	Retain				
					RAC9	Periodically brief the ORAA and Field Teams of the status of the emergency	Retain				
					RAC10	Work with the Rad & EOF Manager to ensure that the PAR Boards are kept up to date.	Retain				
					RAC11	Work with the Rad & EOF Manager & MIDAS Operator to continually monitor potential PAR changes	Retain				

					RAC12	Ensure to inform the EOF Communicator of pertinent information for display on the Electronic Status Board (ESB)	Retain				
					RAC13	Keep the Rad & EOF Manager apprised of ongoing status.	Retain				
					RAC14	Ensure Dose Projections and Field Team reports are reviewed ASAP to quickly identify potential changes to PARs and/or EAL Entry Conditions	Retain				
					RAC15	Verify MIDAS information is consistent with data obtained from the Offsite Field Monitoring Teams	Retain				
					RAC16	If it is determined that an EAL Entry Condition may have been met IMMEDIATELY notify the ER&RD and EOF Ops Liaison to review the information and take the appropriate action	Retain				
					RAC17	Verify plume characterization	Retain				
					RAC18	Identify additional dose projections based on status changes as needed	Retain				
					RAC19	Upon arrival of the State Field Teams the Rad & EOF Manager and RAC should brief the Team leader	Retain				
					RAC20	Coordinate with the ER&RD, Rad & EOF Manager, & SRPC to develop implement a Recovery/Reentry Plan	Retain				
EOF	NRC HPN Communicator (EOFHPN)	No	No	No	EOFHPN1	Notify the Radiological and EOF Manager that you are assuming the NRC-HPN Communicator position.	Retain				DAEC Plan "B"
					EOFHPN2	Log on to ERDS	Retain				DAEC Plan "F"
					EOFHPN3	Communicate (via regular phone line) with the NRC-HPN Communicator in the TSC to learn what information has already been communicated on the HPN line	Retain				DAEC Plan "H"
					EOFHPN4	Obtain the latest Health Physics Information (Radiological and Meteorological Data Form and Dose Projection Form) from the RAC	Retain				
					EOFHPN5	To gain access to the HPN and connect to the HPN conference bridge, call the NRC Operations Center in Rockville, Maryland	Retain				
					EOFHPN6	Maintain an open, continuous communication channel with the NRC Operations Center. Communicate information as directed or requested by the NRC or the Rad and EOF Manager, on the event status	Retain				
					EOFHPN7	Record on an EOF Log Sheet, or equivalent, any information provided to or received from the NRC.	Retain				
					EOFHPN8	Notify the NRC Operations Center via the FTS 2001 ENS line (and the NRC Site Resident Inspectors via other means) upon any upgrades to EALs/PARs once the EOF has been activated.	Retain				
EOF	Field Team Director (EOFFT)	No	No	No	EOFFT1	Verify radios setup for Field Team use at EOF	Retain				DAEC Plan "B"
					EOFFT2	Perform a radio check with all Field Teams (once dispatched).	Retain				DAEC Plan "H"
					EOFFT3	Inform the SRPC/RAC that contact has been established and that you are ready to control the Field Teams.	Retain				
					EOFFT4	Assume control of the Field Teams as directed.	Retain				
					EOFFT5	Obtain team information from TSC Field Team Director or the Field Teams	Retain				
					EOFFT6	Perform a check of backup cell phones by placing a call from the EOF to the numbers provided by the Field Teams.	Retain				
					EOFFT7	Brief the Field Teams and direct to locations for monitoring	Retain				
					EOFFT8	Consider replacing TLD and particulate/iodine filters at environmental sample stations (coordinate with SRPC/RAC).	Retain				
					EOFFT9	Keep the State Field Team Captain apprised of team locations and samples for delivery, and likewise keep informed of State Field Team locations and results. Coordinate with the RAC.	Retain				
					EOFFT10	Ensure that all rad data boards and logs are kept up to date.	Retain				
EOF	Rad Data Plotter (RDP)	No	No	No	RDP1	Fill out and maintain Field Team status boards	Retain				
					EMIDAS1	start up the MIDAS dose projection program and verify ready for dose projection runs	Retain				DAEC Plan "B"
					EMIDAS2	Verify Radiological & Meteorological Data Status Boards are current.	Retain				DAEC Plan "H"
					EMIDAS3	Inform the RAC when dose projection responsibility can be assumed	Retain				
					EMIDAS4	Coordinate turnover of dose projection with the TSC MIDAS operator	Retain				
					EMIDAS5	Request the RAC to provide a 'Start Time of Release' by verifying with the SRPC once indications of a release are present.	Retain				

EOF	MIDAS Operator (EMIDAS)	No	Yes	No	EMIDAS6	With assistance from the Ops Liaison, verify the Time of Reactor Shutdown	Retain				
					EMIDAS7	Perform MIDAS dose projection calculations every 15 minutes.	Retain				
					EMIDAS8	Perform special dose projections as requested by the RAC.	Retain				
					EMIDAS9	Notify the RAC and Field Team Director of any significant change in wind direction, wind speed or release rate	Retain				
					EMIDAS11	With a release in progress and a MIDAS case completed, obtain a Field Monitors Gamma Dose Rate plot to verify Field Team measurements and MIDAS agree.	Retain				
					EMIDAS12	With a release in progress ( $\geq 1$ Rem TEDE or $\geq 5$ Rem CDE), circle those affected subarea(s) that appear on the report	Retain				
					EMIDAS13	Maintain updated information on the status boards	Retain				
					EMIDAS14	Maintain the field team map	Retain				
EOF	Communicators (EOFCOM)	No	No	No	EOFCOM1	Log on to Electronic Status Board	Retain				DAEC Plan "B"
					EOFCOM2	Update the Electronic Status Board with all pertinent informa	Retain				
					EOFCOM3	Call into the conference bridge between the EOF (you), the TSC Communicator, the Shift Communicator in the Control Room, and the JIC Tech Liaison	Retain				
					EOFCOM4	update the INPO "Plant Status – Multi Agency" status board in WebEOC	Retain				
EOF	Messenger (EOFM)	No	No	No	EOFM1	Obtain supplies for temporary access into the EOF	Retain				DAEC Plan "B"
					EOFM2	Process EOF staff as they arrive, verifying they sign in on the position board and have name and position badges	Retain				
					EOFM3	Use EPIP FORM EOF-18, EOF Staffing Accountability Roster, to verify that those present are accounted for and to identify those positions not yet filled and inform the ER&RD.	Retain				
					EOFM4	Work closely with Alliant security staff (real event only) to limit access to authorized people only	Retain				
					EOFM5	For a real event, post the "ACCESS LIMITED TO AUTHORIZED PERSONNEL ONLY" signs.	Retain				
					EOFM6	For a drill, post the "THIS IS A DRILL" and "DRILL NOTICE" signs.	Retain				
					EOFM7	Verify personnel who are delivering equipment and/or supplies for the event sign-in and sign-out on the Personnel Access Log (NON-DAEC Personnel).	Retain				
					EOFM8		Retain				
					EOFM9	Ask ER&RD what the Emergency Action Level (EAL) is and post signs accordingly	Retain				
					EOFM10	Monitor fax and phones	Retain				
					EOFM11	Distribute and fax forms as required	Retain				
EOF	Recorders (EOFREC)	No	No	No	EOFREC1	Contact each of the State and County Tech Liaisons and document applicable backup phone numbers. Maintain communications	Retain				DAEC Plan "B"
					EOFREC2	Continually communicate pertinent information and answer questions on event status	Retain				
					EOFREC3	Confirm all details regarding plant and equipment status reported to county and state liaisons by referring to the Electronic Status Board, SPDS, Ops Liaison, Rad & EOF Manager, or ER & RD.	Retain				
					EOFREC4	Refer all questions about rumors to the Public Rumor Control representative in the JIC	Retain				
					EOFREC5	Keep a log of significant events and activities	Retain				
					EOFREC6	Complete Form EOF-28, "Verbal Closeout Summary Sheet" of Appendix 1 of the EPIP manual when the emergency condition has been resolved or as directed.	Retain				
					EOFREC7	Develop a written summary (Form EOF-29, "Written Closeout Summary" of Appendix 1 of the EPIP manual) for distribution to all offsite EOCs within 8 hours of the verbal summary, above.	Retain				
					EOFREC8	Review LI-AA-102-1001 for other 10 CFR reporting requirements.	Retain				
					EOFIT1	Once determining ERDS is transmitting to the NRC, check with the SRPC (if the Alternative TSC is staffed) or the RAC if they want the ERDS 15-minute reports to run.	Retain				DAEC Plan "B"
					EOFIT2	As necessary, assist the EOF Ops Liaison, Rad and EOF Manager, NRC-HPN Communicator, and Radiological Assessment Coordinator with the start up of the ERDS.	Retain				DAEC Plan "H"
					EOFIT3	Verify time displayed on EOF clock is synchronized with SPDS displayed time. Adjust the EOF clock as necessary.	Retain				
					EOFIT4	Establish phone contact with Information Service Representatives in the TSC and inform them of the operational status of the EOF Computer Equipment	Retain				

EOF	Information Services Rep (EOFIT)	No	No	No	EOFIT5	Upon determination that computer data is good/bad turn on/off displayed data as necessary and make the announcement of such to the EOF Responders.	Retain					
					EOFIT6	Connect the Ethernet cable for the auditorium to the switch in the 7th Floor switch closet.	Retain					
					EOFIT7	Assist the TSC-EOF Communicator with the startup of the Electronic Status Board (ESB); ensure the PC clock is synchronized with the EOF/JIC clock.	Retain					
					EOFIT8	Assist the MIDAS Operator to verify operability of all MIDAS system required parameter inputs.	Retain					
					EOFIT9	Assist other EOF personnel, as necessary, to ensure the TV monitors are displaying information as they desire.	Retain					
					EOFIT10	After termination of the drill or event, disconnect the Ethernet cable for the auditorium from the switch in the 7th Floor switch closet.	Retain					
					EOFIT11	Upon conclusion of the event, communicate with the TSC IM Rep to ensure the ERDS link to the NRC is disconnected	Retain					
EOF	State / County Technical Liaisons (LIAS)	No	No	No	LIAS1	Communicate with EOF Technical Recorder to stay updated on current plant status. Provide this information to State and County EOCs and relay any questions between the OROs and EOF	Retain				DAEC Plan "B"	
EOF	Support Services Coordinator (EOFSS)	No	No	No	EOFSS1	Notify Alliant Energy security to provide security for the 6th and 15th floor. Inform ERRD when done	Retain					DAEC Plan "B"
					EOFSS2	Notify Alliant Facility Services Manager and place on standby.	Retain				DAEC Plan "H"	
					EOFSS3	Assist the ER&RD as needed.	Retain				Appendix 6	
					EOFSS4	Determine additional shift staffing including long-term staffing using ETB	Retain					
					EOFSS5	Ensure a work location is designated for INPO in the event they arrive in the EOF.	Retain					
JIC	JIC Manager (JICM)	No	No	No	JICM1	Receive plant update from ER&RD and discuss whether to activate if at an Alert.	Retain					DAEC Plan "A"
					JICM2	Contact Director of Nuclear Communications or the Manager of Corporate communications and inform them of the event and the JIC is being activated	Retain				DAEC Plan "B"	
					JICM3	Contact Benton and Linn County EMAs and inform them that the JIC is being activated.	Retain				DAEC Plan "E"	
					JICM4	Determine level of staffing needed for the JIC to activate	Retain				DAEC Plan "G"	
					JICM5	Brief the JIC on the event	Modify	JICS will provide technical briefing and JM will brief on information flow, needs, and coordination with the Corporate JIC	JICS4		DAEC Plan "H"	
					JICM6	Direct Technical Liaison to post on the status board that the JIC has been activated.	Modify	JICS is assuming technical liaison duties and will need to ensure that status board gets updated with JIC activation time.	JICS8			
					JICM7	If facility is locked call Alliant Tower Security. Provide Alliant Tower Security in the Lobby the Receptionist Advisory	Retain					
					JICM8	Direct JIC staff to set-up the facility if not started, or release the staff from the facility when it is determined the JIC will not be needed.	Retain					
					JICM9	Ask the Assistant JIC Manager to alert the JIC Manager when they have received notice that Media has arrived at the Tower.	Retain					
					JICM10	When a large number of Media have arrived, greet them with the Spokesperson and the Media Host. Discuss the event classification and other information.	Modify	Media Host will not be assisting with this task				
					JICM11	Determine when the JIC is prepared to receive news Media.	Retain					
					JICM12	Contact the ER&RD and advise when the JIC is ready for press conference.	Retain					
					JICM13	Ensure the Tech Liaison has updated the status board that the JIC is ready for press conferences.	Modify	Status Board will be monitored by JICS and JICS will direct who will update status board	JICS8			
					JICM14	Notify the Media Host to direct news Media to the 6th floor auditorium	Modify	JICM to direct others to bring News Media to 6th floor auditorium				
					JICM15	Review and approve written information releases and direct the distribution of the releases.	Retain					
					JICM16	Conduct periodic JIC briefings	Retain					
					JICM17	Lead a pre-conference discussion between the Spokesperson, Tech. Liaison, PIOs and others in the JIC.	Modify	JIC Tech Liaison is being eliminated				
					JICM18	Coordinate premise statements and key information points from the presenters.	Retain					
					JICM19	Schedule news conferences and coordinate/moderate all news conferences	Retain					
					JICM20	Coordinate with the Assistant JIC Manager to respond to public and news Media rumors or misinformation	Retain					
					JICM21	Conduct news briefings as needed.	Retain					

					JICM22	Coordinate with Logistics Coord, to ensure 24 hr staffing and adequate supplies are available for 24 hour operation	Modify	Coordinate with AJM to ensure 24 hour staffing	AJM39		
					JICM23	Coordinate with Logistics Coordinator, ensure that the Family Care Line is monitored and messages are relayed.	Modify	Coordinate with AJM to monitor family care line	AJM40		
					JICM24	Coordinate and schedule interviews requested by the Media	Retain				
					JICM25	If JIC needs to be relocated, direct the relocation of news Media, JIC staff, and PIOs to Kirkwood and issue news release about relocation of the JIC	Retain				
					JICM26	Coordinate and schedule interviews requested by the Media.	Retain				
JIC	JIC Spokesperson (JICS)	w	No	No	JICS1	Initiate emergency event log	Retain				DAEC Plan "B"
					JICS2	Report to EOF and be briefed by the ER&RD	Retain				DAEC Plan "H"
					JICS3	Consult with JIC Manager on status of facility	Retain				
					JICS4	With Technical Liaison, ensure JIC staff is brief on status of the event.	Modify	Tech Liaison eliminated. JICS provides technical information during brief along with JICM			
					JICS5	Approve all written information releases in a timely manner.	Retain				
					JICS6	Provide holding statements to Assistant JIC Manager to help answer media phone calls.	Retain				
					JICS7	Attend pre-conference meetings with JIC Manager and State and County PIOs to coordinate information being given in news conference and the order in which information will be presented.	Retain				
					JICS8	Ensure the status board is updated that the JIC is activated. Ensure updated when ready for press conferences.	Retain			JICM13	
					JICS9	Participate in news briefings with media as needed to maintain JIC as the official source of information regarding the event.	Retain				
					JICS10	Periodically update DAEC's Governmental Liaisons	Retain				
					JICS11	Call Media Host to confer with regarding visual aids needed before each news conference.	Retain				
					AJM1	At an Alert, Site Area, or General Emergency, meet and help the Assistant JIC Manager (Reactive).	Retain				DAEC Plan "B"
					AJM2	Begin to keep an Emergency Event Log to capture important information as it happens.	Modify	Add to contact EOF Support Services Coordinator			
					AJM3	Report to the JIC. If the facility is locked, call Alliant Tower Security and request that they open the 6th and 15th floor rooms.	Retain				
					AJM4	Sign in on staffing board and obtain name and position badge.	Retain				
					AJM5	Sign in on the staffing roster and obtain security badge.	Retain				
					AJM6	Oversee set up of equipment and supplies for the Assistant JIC Managers.	Retain				
					AJM7	Write and send out first news release about the emergency/drill. NOTE: Spokesperson must approve all news releases, use Press Release Approval sheet.	Retain				
					AJM8	Handle phone calls when the Assistant JIC Manager (Reactive) is not present.	Retain				
					AJM9	Continually gather information about the plant status.	Retain				
					AJM10	If the plant status changes, write and send out news releases. NOTE: Spokesperson must approve all news releases, use Press Release Approval sheet.	Retain				
					AJM11	Coordinate with State PIO to assure the State has approved the press release for inclusion in WebEOC. Post approved NEER DAEC press releases to WebEOC and give a copy to Logistics Support to distribute.	Retain				
					AJM12	Be prepared to help the Assistant JIC Manger (Reactive) as needed.	Retain				
					AJM13	Monitor WebEOC for press releases sent from the State and Counties.	Retain				
					AJM14	Monitor the live cable feed of the news conferences in the Auditorium.	Retain				
					AJM15	Furnish the new shift with printout of news releases and Assistant JIC Manager (Proactive) log, and brief the replacement Assistant JIC Manager (Proactive).	Retain				
					AJM16	Immediately upon termination of the emergency/drill, complete the log and give all documentation to the JIC Manager.	Retain				
					AJM17	Ensure that all equipment is stored properly.	Retain				
AJM18	Participate in the critique session.	Retain									

JIC	Assistant JIC Manager (AJM)	No	No	No	AJM19	If certain JIC personnel need to relocate to the Alternate JIC location at Kirkwood Community College, the Assistant JIC Manager (Proactive) remains at the Alliant Tower. Help the Assistant JIC Manager (Reactive) prepare to relocate.	Retain									
					AJM20	Write and send out the news release that the JIC has relocated to the Alternate JIC, including a description of the new location.	Retain									
					AJM21	At an Unusual Event the JIC Manager and the Site Director decide whether to contact the media through regular processes or to activate the JIC.	Retain									
					AJM22	At an Alert, Site Area, or General Emergency, notify key stakeholders that the DAEC has an emergency and that they will receive more information via fax from the JIC.	Retain									
					AJM23	Begin to keep an Emergency Event Log to capture important information as it happens.	Retain									
					AJM24	Report to the JIC. If the facility is locked, call Alliant Tower Security and request that they open the 6th and 15th floor rooms.	Retain									
					AJM25	Sign in on the staffing roster and obtain security badge.	Retain									
					AJM26	Oversee the set up of equipment and supplies for the Assistant JIC Managers.	Retain									
					AJM27	As needed, assist the Spokesperson, JIC Manager, and the Media Host with meeting the media in the Alliant Tower Lobby.	Retain									
					AJM28	Notify JIC Manager of media arrival.	Retain									
					AJM29	Continue to gather information about the plant status.	Retain									
					AJM30	Respond to unsolicited calls from the media. If a live interview is requested, advise the JIC Manager.	Retain									
					AJM31	Respond to reports from the Media Rumor Control by informing JIC Manager and Spokesperson of rumors.	Retain									
					AJM32	Print and post a Rumor Control Log to TV Monitor, print one for the JIC Manager, and print one for the Spokesperson.	Retain									
					AJM33	Once the JIC Manager or Spokesperson has corrected or addressed a rumor, provide feedback to United Way 2-1-1 Representative and update the Rumor Control Log.	Retain									
					AJM34	Monitor the live cable feed of the news conferences in the Auditorium.	Retain									
					AJM35	Be prepared to help the Assistant JIC Manager (Proactive) as needed.	Retain									
					AJM36	Furnish the new shift with the Assistant JIC Manager log and brief your replacement.	Retain									
					AJM37	Immediately upon termination of the emergency/drill, complete the log and give it to the Logistics Coordinator	Retain									
					AJM38	Ensure that all equipment is stored properly.	Retain									
					AJM39	Coordinate with Logistics Coord, to ensure 24 hr staffing and adequate supplies are available for 24 hour operation	Retain			JICM22						
					AJM40	Coordinate with Logistics Coordinator, ensure that the Family Care Line is monitored and messages are relayed.	Retain			JICM23						
					AJM41	If certain JIC personnel need to relocate to the Alternate JIC location at Kirkwood Community College, the Assistant JIC Manager (Reactive) is on the team that relocates.	Retain									
					JIC	Technical Liaison (TL)	No	No	No	TL1	Report to JIC. (If you arrive and the facility is locked, call Tower Security.	Retain				DAEC Plan "B"
										TL2	Obtain name and position badge. Sign in on staffing board.	Retain				
										TL3	Initiate an Emergency Event Log.	Retain				
										TL4	Log on to the position's computer using your standard network login (slid).	Retain				
										TL5	Turn on the overhead projector.	Retain				
										TL6	Log on to ERDS. Refer to EPIP Form EOF-13, Viewing of PI-Based SPDS and ERDS.	Retain				
										TL7	Ensure that the Electronic Status Board is operational.	Retain				
										TL8	Establish communications with the EOF Communicator in the EOF.	Retain				
										TL9	Continue gathering information about the plant status.	Retain				
										TL10	Monitor the live cable feed of the news conferences in the auditorium.	Retain				
										TL11	Coordinate news releases with the Assistant JIC Managers.	Retain				

					TL12	Work with the EOF Communicator, the Shift Communicator in the Control Room, and TSC Communicator to adequately maintain the ESB and maintain an open communication link	Retain				
					TL13	Advise the Assistant JIC Managers on the content of news releases, telephone calls from the media and responses to reports from the Media Rumor Control.	Retain				
					TL14	As requested by the JIC Manager, brief all staffs from the DAEC and Federal/State/County Work Areas about the plant status.	Retain				
					TL15	Federal/State/County Work Areas about the plant status.	Retain				
					TL16	If requested by the JIC Manager, participate in special technical news briefings.	Retain				
					TL17	Furnish the new shift with logs and brief your replacement.	Retain				
					TL18	Immediately upon termination of the emergency or drill, complete the log and give documentation to the Logistics Coordinator	Retain				
					TL19	Ensure all equipment is stored properly and participate in critique session.	Retain				
JIC	Security Access Clerk (JICSEC)	No	No	No	JICSEC1	Ensure entry doors remain closed or locked to media personnel or unauthorized personnel once the JIC is activated	Retain				DAEC Plan "B"
					JICSEC2	Obtain supplies and assemble for use	Retain				
					JICSEC3	Set up access table and badges	Retain				
					JICSEC4	Post signs for 6th floor doors to annotate access status	Retain				
					JICSEC5	Notify the Logistics Coordinator when your area is setup and when you are ready to accept media	Retain				
					JICSEC6	Process News Media, observers and / or evaluators as they arrive	Retain				
					JICSEC7	Ensure "News Media and Guests" instruction sheet is given to all visitors on the 6th floor	Retain				
					JICSEC8	Security on 6th floor should ensure that guests and members of the media show an ID, are provided an instruction sheet and sign in to the media registration log	Retain				
JIC	News Media Rumor Control (NMRC)	No	No	No	NMRC1	Contact Alliant Tower security and request that they open the 6th floor and 15th floor room.	Retain				DAEC Plan "B"
					NMRC2	Initiate emergency event log	Retain				
					NMRC3	setup and test television sets and recorders. Record broadcasts	Retain				
					NMRC4	Verify that two AM/FM radios are functional. Monitor local radio	Retain				
					NMRC5	Setup the electronic status board	Retain				
					NMRC6	Ensure live feed from the 6th floor auditorium is operational. Contact Logistics Coordinator with any equipment problems	Retain				
					NMRC7	Ensure access to the internet	Retain				
					NMRC8	Advise Logistics Coordinator when area is operational	Retain				
					NMRC9	Review copies of information releases from the JIC including EAS messages	Retain				
					NMRC10	Monitor JIC News conferences and briefings	Retain				
					NMRC11	Monitor television, radio and internet coverage of the emergency situation by the media and compare to information releases from the JIC	Retain				
					NMRC12	Record multiple newscasts and live news briefings to playback and review	Retain				
					NMRC13	Periodically monitor local radio and television shows	Retain				
					NMRC14	Log any rumors or misinformation in the news media coverage on a Media Rumor control log and report this to the Assistant JIC Manager or JIC Manager	Retain				
					NMRC15	Report any trends in media reports to the Assistant JIC Manager	Retain				
					PIOS1	Ensure that fax machines transmit and receive by sending test faxes to each agency listed in the table below. Log any returned faxes	Retain				DAEC Plan "B"
					PIOS2	Sign in to WEBEOC and monitor emergency messages, event logs and press releases	Retain				
					PIOS3	Turn on all JIC tv monitors in the JIC	Retain				
					PIOS4	Orient the PIOs to the Work Area as they arrive.	Retain				
					PIOS5	Ensure that the PIOs are able to set up the Administrative Hotline to establish comms with the State EOC	Retain				

JIC	PIO Support (PIOS)	No	No	No	PIOS6	Report problems with equipment or supplies to the Logistics Coordinator.	Retain									
					PIOS7	Notify the Logistics Coordinator when the Work Area is functional.	Retain									
					PIOS8	Process, log and email press releases appearing on WebEOC	Retain									
					PIOS9	Maintain files of all incoming EAS Messages and press releases by saving to a folder with the drill/event date.	Retain									
					PIOS10	If NOTE-05 documents are received on JIC fax machine, give these to PIOs.	Retain									
					PIOS11	Distribute incoming messages and press releases delivered by Logistics Support personnel to each of the PIOs and keep a copy for records	Retain									
					PIOS12	For drills, distribute media reports to PIOs (provided by controller).	Retain									
					PIOS13	Assist as needed to maintain flow of information within the JIC.	Retain									
					PIOS14	At the end of the emergency/drill, print out the fax activity report.	Retain									
					PIOS15	Furnish new shift with the Emergency Event Log and brief your replacement.	Retain									
					PIOS16	Immediately upon termination of the emergency/drill, complete the Emergency Event log and give all documentation to the JIC Manager.	Retain									
					PIOS17	Ensure that all equipment is stored properly.	Retain									
					JIC	Media Host (MH)	No	No	No	MH1	Report to the JIC, sign in on board, obtain Media Host Notebook, initiate a log.	Retain				DAEC Plan "B"
										MH2	Take Graphics Cart to the 6th floor auditorium and set-up electronic graphics (AV support will assist with electronic setup	Retain				
										MH3	Setup auditorium (a) tables, (b) wire racks/folders, place bell in front of the racks To notify media when a new press release or message is delivered, (d) set up clock	Retain				
										MH4	Have bottles of water brought down	Retain				
										MH5	Notify Logistics Coordinator when auditorium is set-up	Retain				
MH6	make sure cordless phone for Media Host use is plugged in and make local phone books available to the media.	Retain														
MH7	Assistant JIC Manager will call when media have arrived and will inform you when the JIC Manager and Spokesperson are ready to go to the lobby to greet the media.	Retain														
MH8	Join the JIC Manager and Spokesperson in greeting the media. If the auditorium is not ready when the JIC Manager needs to bring the media to the 6th floor, place them in the media holding room (refer to floor plan on page 4). When the JIC is operational bring the media into the auditorium.	Retain														
MH9	Provide media with orientation to the JIC and how news conferences will be conducted.	Retain														
MH10	Assist the media by relaying specific needs or questions back to the Assistant JIC Manager.	Retain														
MH11	Post news conference times in the Auditorium (provided by the JIC Manager / Assistant JIC Manager).	Retain														
MH12	Cue graphics prior to press conference. There is a laser pointer located in the pouch in the media host notebook to be placed on the PIO table.	Retain														
MH13	Record the start and end times of each press conference, who presented during the conference, and a brief summary of the briefing in position's emergency event log.	Retain														
MH14	Auditorium doors are closed during news conferences. After press conference, see if any news releases were left with Security personnel to be distributed to the media.	Retain														
MH15	Immediately upon termination of the emergency/drill, complete the logs and give all documentation to the JIC Manager.	Retain														
MH16	Empty all media folders so there are no press releases left in them when they are used for the next drill.	Retain														
MH17	Assure that all equipment is properly stored. Place everything back on the graphics cart in the proper order. Make sure the phone and clock are plugged into the surge strip to maintain the batteries.	Retain														
MH18	Assist the media by relaying specific needs or questions back to the Assistant JIC Manager.	Retain														
					LC1	Report to the JIC and wait to be advised on status of JIC. (If you arrive and the facility is locked, call Tower Security and request that they open the 6th and 15th Floor rooms.)	Retain				DAEC Plan "B"					
					LC2	If the facility is being activated, supervise completion of activities to set up the facility. Obtain name and position badge. Sign in on staffing board.	Retain									
					LC3	Ensure the Electronic Status Board is operational.	Retain									

JIC	Logistics Coordinator (LC)	No	No	No	LC4	Initiate Emergency Event Log.	Retain			
					LC5	Close glass doors at entrance of rear auditorium.	Retain			
					LC6	If JIC is activated during normal working hours, direct non-essential personnel to evacuate 6th and 15th floors.	Retain			
					LC7	Verify equipment and office supplies are in place in the JIC.	Retain			
					LC8	Verify that JIC staff has arrived and signed in on the staffing board.	Retain			
					LC9	Verify with Public Rumor Control Coordinator (211 Program Manager) that the 211 Call Center is operational.	Retain			
					LC10	Verify that JIC Security Access has been established.	Retain			
					LC11	Verify that two Tower Security Guards have been posted on 6th and 15th Floors	Retain			
					LC12	Before the Media arrives ensure that the Auditorium and the AV Support are set up. (Folding wall is to be opened.)	Retain			
					LC13	Ensure live cable feeds have been established and are operational in the Federal/State/County Work Area, DAEC Work Area and News Media Rumor Control.	Retain			
					LC14	Advise the JIC Manager when the JIC is ready to receive news media.	Retain			
					LC15	Inform Security Access and News Media Rumor Control personnel when the JIC is declared activated.	Retain			
					LC16	Coordinate, as needed, requests for logistical support with Support Services Coordinator in the EOF.	Retain			
					LC17	Coordinate with Media Host to prepare the Auditorium and the platform for the presenters.	Retain			
					LC18	Schedule and notify relief personnel for 24 hour JIC operation if the emergency continues.	Retain			
					LC19	Coordinate with Support Services Coordinator in the EOF for transportation of news media for plant tours, as needed.	Retain			
					LC20	Request assistance with readying the JIC for a large media presence.	Retain			
					LC21	If a wide area disaster has caused the plant event, activate corporate level support plans for extreme external events by contacting the NextEra Energy Security Operations Center at 561-694-5000. Give notification that you will be monitoring the DAEC Family Care Line and monitor the line.	Retain			
					LC22	Ensure all areas are restored to their pre-event status (see attached 6th and 15th Flow Plans).	Retain			
					LC23	Coordinate with JIC Manager to provide necessary secure file storage for all JIC generated documentation.	Retain			
					LC24	Collect all logs and checklists from staff upon deactivation of the JIC and deliver to the DAEC Emergency Planning Department and participate in critique.	Retain			
LC25	Assist JIC Manager to relocate key JIC staff to facilities on the main campus of Kirkwood Community College (Emergency Telephone Book for contact information).	Retain								
LC26	Arrange for vehicles to transport staff and equipment as needed.	Retain								
LC27	Establish telephone, fax, and internet communications between staff at the Backup JIC Facility and the Alliant Tower.	Retain								
LC28	Collect all logs and checklists from staff upon deactivation of the JIC and deliver to the DAEC Emergency Planning Department.	Retain								
LC29	Arrange for copy machines, telephones, fax machines, etc., for support of staff at the Backup JIC Facility.	Retain								
JIC	Logistics Support (LS)	No	No	No	LS1	Report to JIC, obtain name and position badge, sign in on staffing board	Retain			DAEC Plan "B"
					LS2	Assist in the set up of the facility	Retain			
					LS3	Copy and distribute information releases and maintain a file of all information releases.	Retain			
					LS4	If asked by the 211 Call Center Manager, scan and distribute hardcopy documents	Retain			