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Effective Date:

TECHNICAL REVIEW	
Prepared by: _____	Date: _____
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PROCEDURE APPROVAL	
Approved by: _____ Manager, Emergency Planning	Date: _____
Reviewed by: _____ Operations Committee Chairman	Date: _____
Approved by: _____ Plant Manager, Nuclear	Date: _____
Authorized by: _____ Vice President, Nuclear	Date: _____

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1.0 PURPOSE

- (1) This section describes the DAEC emergency communications systems and communications links between the Asset Owner, the Nuclear Management Company (NMC) and other response organizations.
- (2) The NMC is assigned operational responsibility for the DAEC. However the Asset Owner maintains corporate accountability for activities at the DAEC and will participate when necessary in activities at the DAEC. The reference "Asset Owner/NMC" will be used throughout this procedure to signify this relationship. Further details regarding this relationship can be found in the "Nuclear Power Plant Operating Services Agreement" (NPPOSA) between the Asset Owner and the NMC.

2.0 REQUIREMENTS

2.1 GENERAL DESCRIPTION OF ASSET OWNER/NMC AND DAEC COMMUNICATIONS SYSTEMS

- (1) DAEC Radiological Survey Radio System
 - (A) This radio system provides base-to-portable communications for conducting radiological surveys throughout the DAEC plume exposure EPZ. The Radiological Survey Radio communications is provided by two systems. The primary system is an 800 MHz trunked/conventional repeater system. The trunked base is located at the Alliant Tower with conventional repeaters located at the Belle Plaine, Traer and Coggon substations. A secondary VHF system provides backup capability for the 800 MHz radio. The VHF base station is also located at the Alliant Tower and provides the capability for simplex operations. The DAEC Security Radio System base station is located at the plant and serves as a backup to the Radiological Survey Radio System for communications with offsite survey teams.
 - (B) The functional diagram of the 800 MHz radio is outlined in Figure F-1.

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(2) DAEC Security (Backup Radiological Survey) Radio System

- (A) This radio system (Figure F-2) provides base-to-portable security communications within the plant. The base station is a mobile relay (repeater) type using two VHF frequency 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, which has two power levels, is controlled from the Secondary Alarm Station, Central Alarm Station, Security Control Point, 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:
 - Ch 1 - DAEC Simplex
 - Ch 2 - DAEC Repeater
 - Ch 3 - Law Enforcement Mutual Aid
 - Ch 4 - Linn County Sheriff Repeater
 - Ch 5 - Offsite Survey Teams (Alliant Tower Base)
 - (iii) All channels, except Ch 3, transmit continuous tone-coded squelch.
 - (iv) The hand-held portables provide security communications between the DAEC, the Linn County Sheriff's office, and law enforcement mobiles or personnel within range of direct portable-to-portable communications.

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- (v) The hand-held portables are used primarily for radiological survey activities within the DAEC parameter and have magnetic-mount 5/8 wavelength gain antennas available for temporary installation on the roof of a vehicle.
- (vi) In addition, the DAEC Radiological Survey teams have two vehicles equipped with a 100-watt radio transceiver for communications to the DAEC at distances greater than obtainable with the high power portables.

(3) Plant Operations Radio

- (A) Figure F-3 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.

(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-4. The transmitter and one control console are located at the Secondary Alarm Station and in the Central Alarm Station. This station is for communications with the Iowa Department of Public Safety radio station, Linn County Sheriff's office, and the Benton County Sheriff's office, 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) Radio Paging System

- (A) A pocket-radio paging system, operated and maintained by a local contractor, is used to page designated Asset Owner/NMC and DAEC management personnel. Pagers are carried by personnel assigned key positions in the Emergency Response Organization. The system is

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designed to enable simultaneous contact of all such personnel in the event of an emergency.

(6) Microwave Facilities

- (A) Asset Owner/NMC, with a group of Iowa utilities, participates in a shared microwave system, a portion of which is illustrated in Figure F-5. 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 the following:
- Six voice channels used for telephone tie trunks, which connect the Asset Owner/NMC automated callout phone system in Cedar Rapids to the DAEC phone system.
 - Various circuits which connect the DAEC substation, the Central Alarm Station, the Secondary Alarm Station, the Linn County EOC, the Benton County EOC, the State of Iowa EOC's, the EOF, the TSC, and the Control Room into a private telephone network referred to as the "DAEC ALL-CALL".
- (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.

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(7) Telephone Facilities

- (A) Figure F-6 illustrates the telephone system. The system is operated and maintained by the Palo Cooperative Telephone Association, the independent telephone company serving Palo, Iowa and US West which serves the Alliant Tower.
- (B) The DAEC PBX is connected to the Palo telephone central office by 20 active Central Office (CO) trunk lines, 48 long distance 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. 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.
- (C) 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 US West. There are seven data lines used for computer operations which do not connect through the PBX.
- (D) A telephone cable connects the DAEC to the central office of the Palo Cooperative Telephone Association with a redundant fiber connection. This cable terminates at the DAEC PBX. The Palo Central Office is connected directly to the central office of U.S. West in Cedar Rapids by means of 50 EAS trunks and is also connected to the Iowa Network Services by 96 long distance trunks.
- (E) The Emergency Operations Facility has available:
 - (i) Dedicated circuits to the NRC on the Federal Telecommunications system FTS-2001.
 - (ii) Direct-ring leased telephone lines and dedicated microwave circuits between the Control Room, Technical Support Center, Operational Support Center, and Emergency Operations Facility.
 - (iii) Direct inward dialing to unlisted numbers in the telephone system.
 - (iv) 200 pair dedicated telecommunications cable between the Emergency Operations Facility and the Linn County Emergency Operations Center.

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(v) Direct-ring microwave and land-based telephone lines between the Control Room, Technical Support Center, Emergency Operations Facility, Iowa Emergency Management Division, Benton County and Linn County Emergency Operations Centers.

(F) 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) The Area Staff Services Group of U.S. West has advised Asset Owner/NMC that their company has two semi-trailers available, each of which contains microwave terminals and multiplex (24 channels) equipment for each end of a 2 GHz link. The equipment can operate on a path up to 40 miles in length. The trailer can be moved into position and connected to the Public Switched Telephone Network within 24 hours after a request is made.

(B) Personnel Contacts for Communications Links

(i) Table F-1 lists the primary and alternate communication contacts between Asset Owner/NMC emergency facilities and supporting local, State, and Federal agencies. The communications links are those identified in Figures F-1 through F-5. Table F-1 also identifies, by title, the principal and alternate contacts at each end of each communications link.

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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 Emergency Management Division, Iowa Department of Public Defense, by radio through the Department of Public Safety Communications, or by microwave through the 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 Asset Owner/NMC emergency facilities may be by telephone (normal and dedicated lines), microwave, or radio as discussed in Section 2.2.

2.4 ASSET OWNER/NMC COMMUNICATIONS WITH NRC

- (1) Section E discusses notification methods and procedures. Paragraph 2.1 of this section and Figures F-2, F-3, F-4, F-5 and F-6 describe the provisions for communicating between Asset Owner/NMC 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-7)

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2.5 COMMUNICATIONS BETWEEN EOC'S AND FIELD ASSESSMENT TEAMS

- (1) Section 2.1 discusses, and Figures F-1 through F-5 illustrate, the provisions for communicating between each emergency center (Asset Owner/NMC, county and state) and with field assessment teams monitoring the offsite radiological impact of the emergency.

2.6 ACTIVATING EMERGENCY RESPONSE PERSONNEL

- (1) Section E discusses notification methods and procedures for offsite authorities. Section A discusses the interrelationships between response organizations and Figure A-1 illustrates activation and notification lines of responsibility. Figures F-1 through F-5 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.

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 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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4.0 ATTACHMENTS

- (1) TABLE F-1, "COMMUNICATIONS PRIMARY AND ALTERNATE CONTACTS"
- (2) FIGURE F-1, "DAEC RADIOLOGICAL SURVEY RADIO SYSTEM"
- (3) FIGURE F-2, "DAEC SECURITY RADIO SYSTEM"
- (4) FIGURE F-3, "PLANT OPERATIONS RADIO SYSTEM"
- (5) FIGURE F-4, "POINT-TO-POINT RADIO SYSTEM"
- (6) FIGURE F-5, "MICROWAVE FACILITIES"
- (7) FIGURE F-6, "IES/NMC AND DAEC TELEPHONE SYSTEMS"
- (8) FIGURE F-7, "FEDERAL TELEPHONE SYSTEM (FTS-2000)"

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TABLE F-1
COMMUNICATIONS
PRIMARY AND ALTERNATE CONTACTS

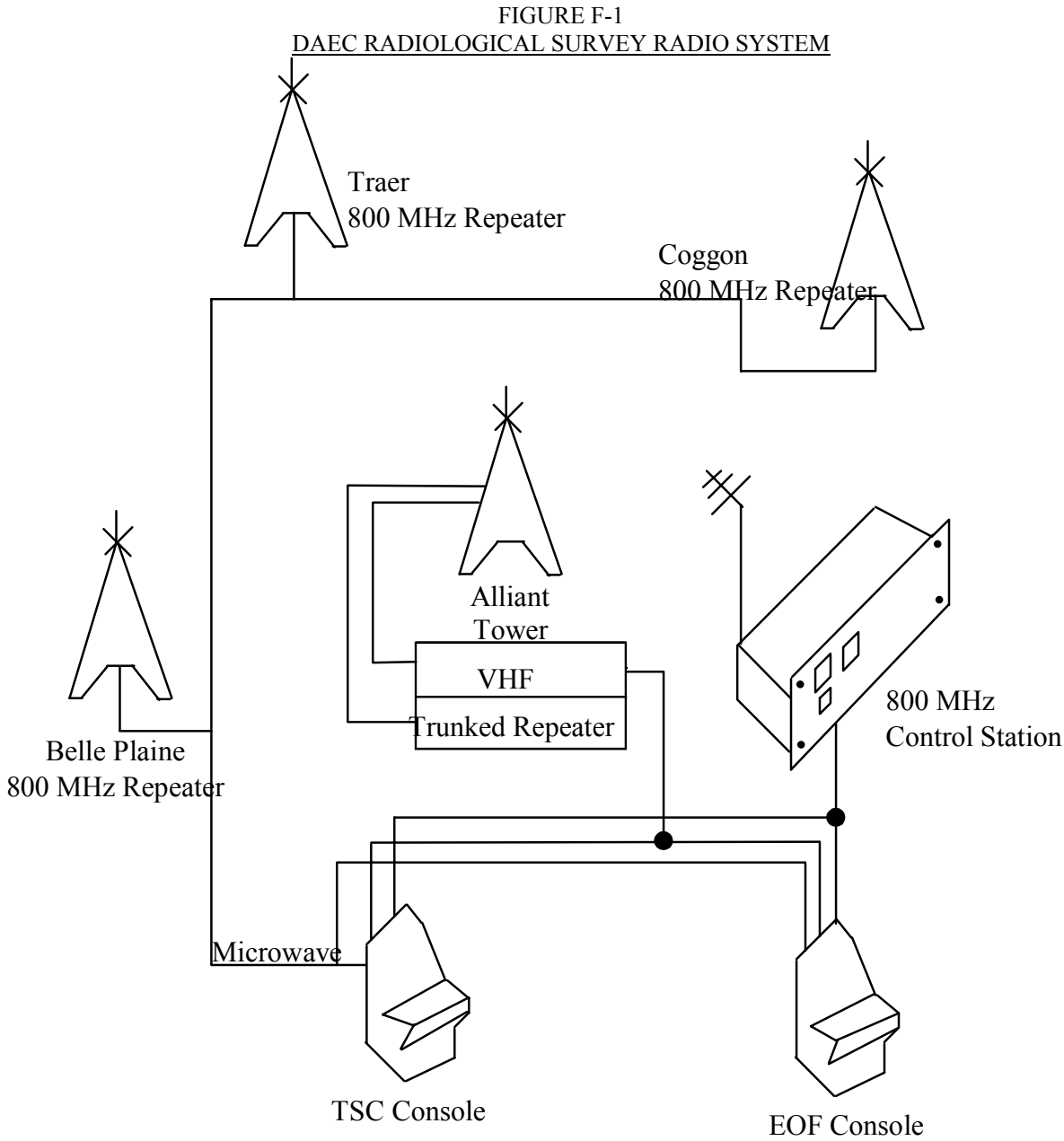
<u>ORGANIZATION/ FACILITY</u>	<u>PRIMARY CONTACT</u>	<u>ALTERNATE CONTACT</u>
1. Asset Owner/NMC, DAEC		
a. Emergency Operations Facility	Emergency Response & Recovery Director	Radiological & EOF Manager
b. Technical Support Center	Emergency Coordinator	Technical and Engineering Supervisor
c. Operational Support Center	Operational Support Center Supervisor	I&C/EM, Mechanical Maintenance Supervisors or HP Supervisor
d. Control Room and Alarm Stations	Operations Shift Manager/Supervisor	TSC Operations Supervisor
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. Benton/Linn Ambulance Service	Sheriff's Office Communications Center	

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TABLE F-1
COMMUNICATIONS
PRIMARY AND ALTERNATE CONTACTS
continued

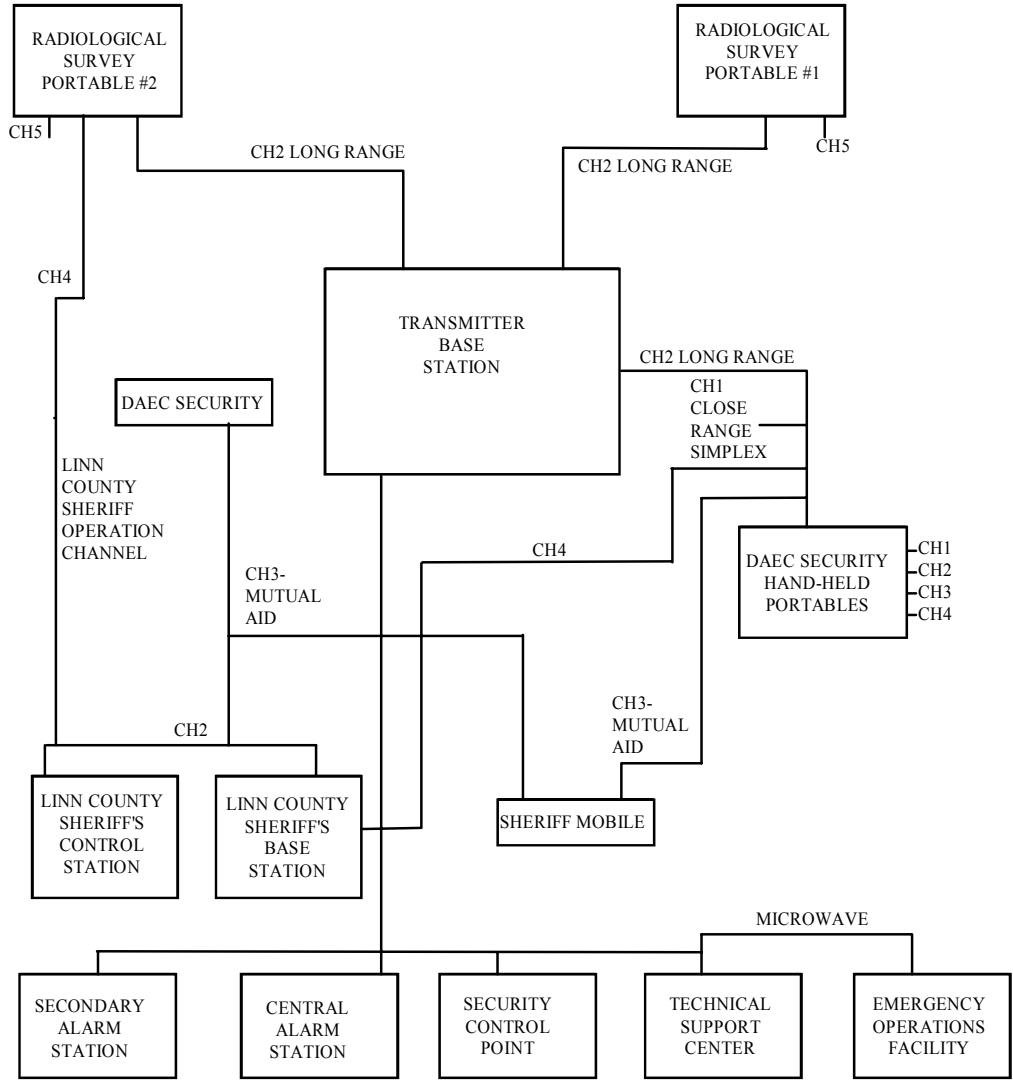
<u>ORGANIZATION/ FACILITY</u>	<u>PRIMARY CONTACT</u>	<u>ALTERNATE CONTACT</u>
e. Mercy Medical Center	Emergency Room Desk	Sheriff's Office Communications Center Operator
f. University of Iowa Hospitals and Clinics	Emergency Room Desk	-----
g. Area Ambulance	Sheriff's Office Communications Center Operator	-----
h. Linn County Sheriff's Rescue	Linn County Sheriff's Dispatcher	----
3. STATE AGENCIES		
a. Emergency Management Division, Iowa Dept of Public Health	Emergency Management Division Administrator	Department of Public Safety, Communications Station
b. University of Iowa	University Telephone Operator	-----
4. 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, Emergency Mgmt. Division, Iowa Dept of Public Health	Federal Emergency Management Agency, Region VII, Kansas City, Missouri

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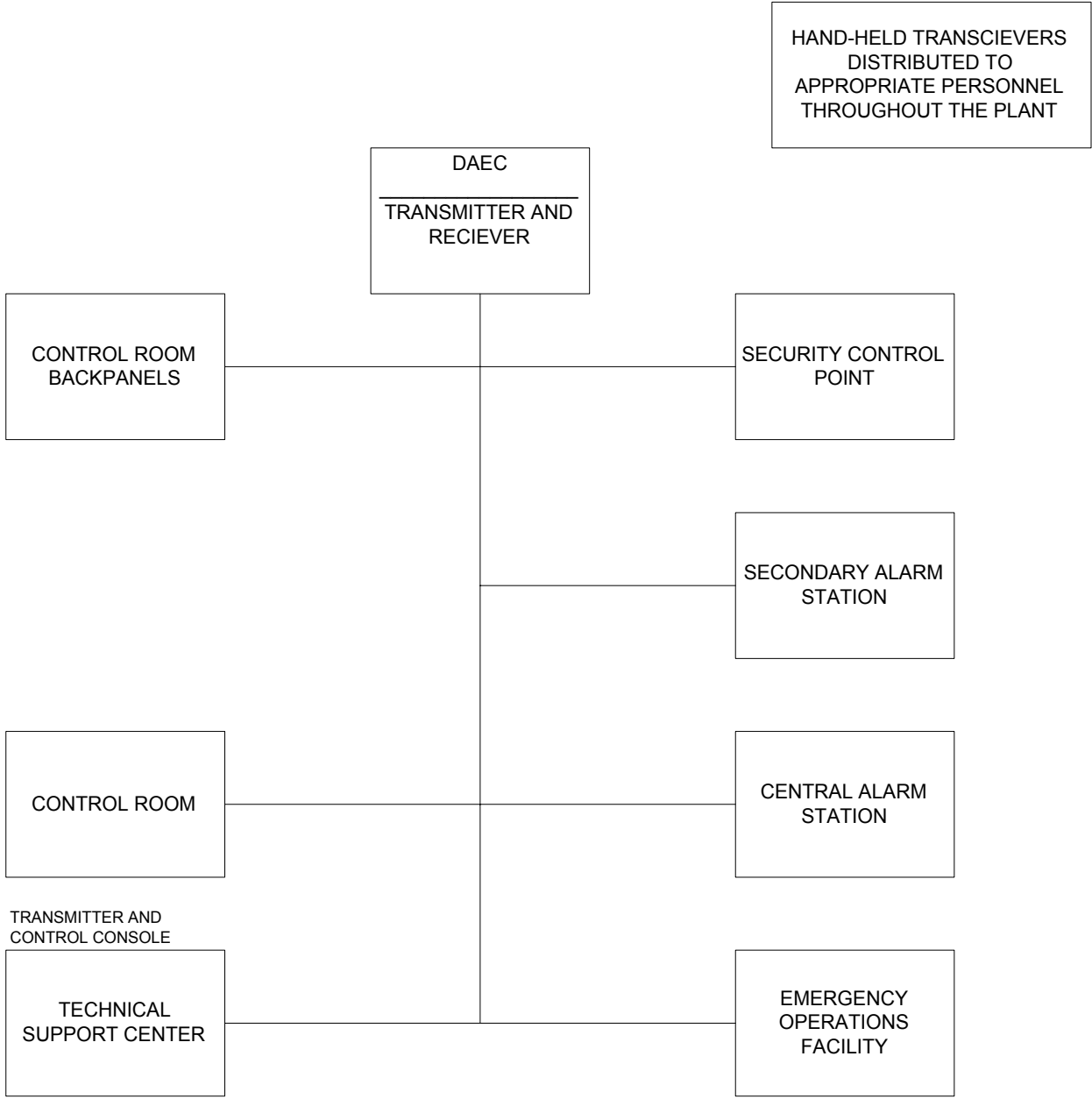
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FIGURE F-2
DAEC SECURITY RADIO SYSTEM



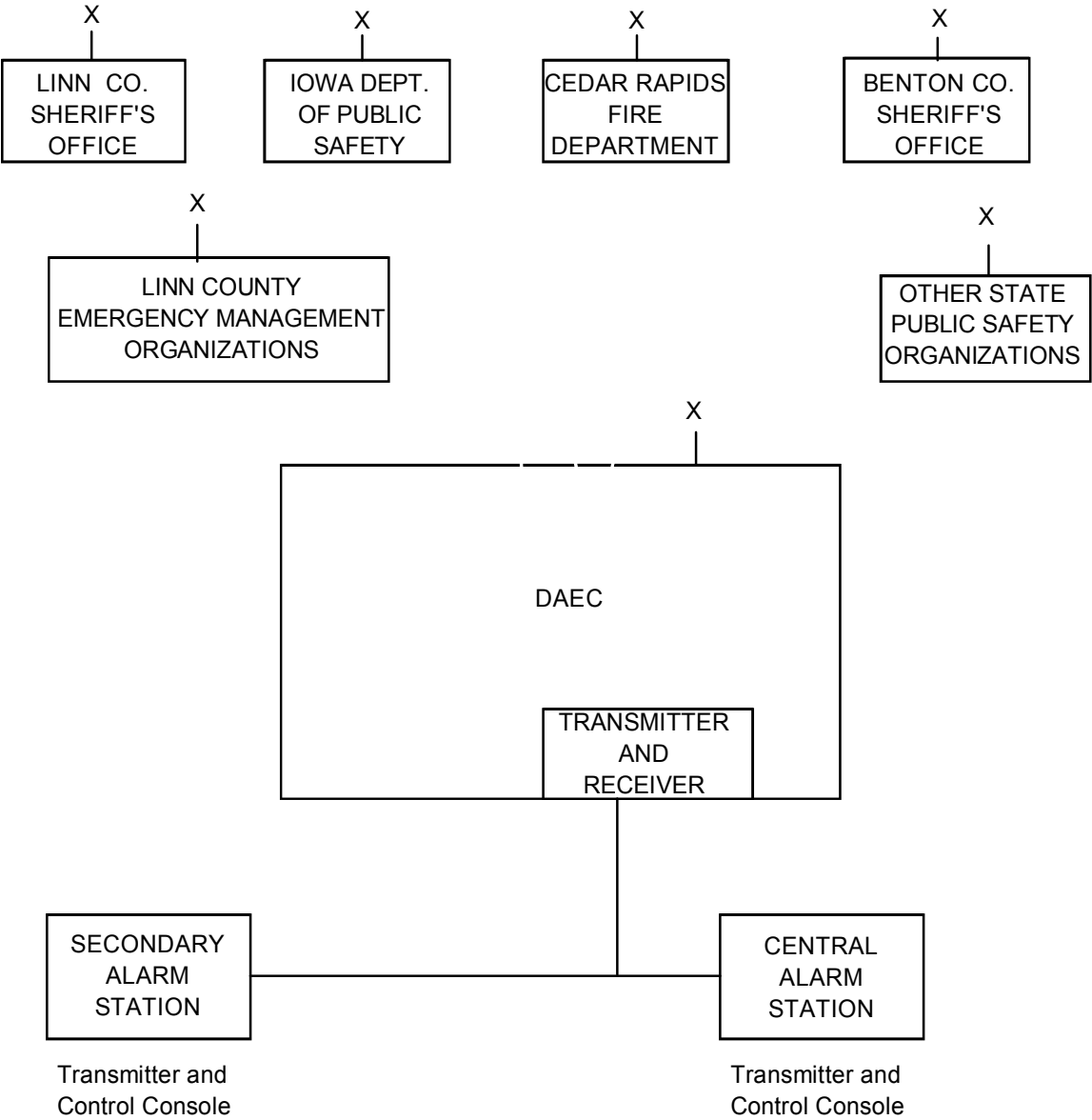
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FIGURE F-3
PLANT OPERATIONS RADIO SYSTEM



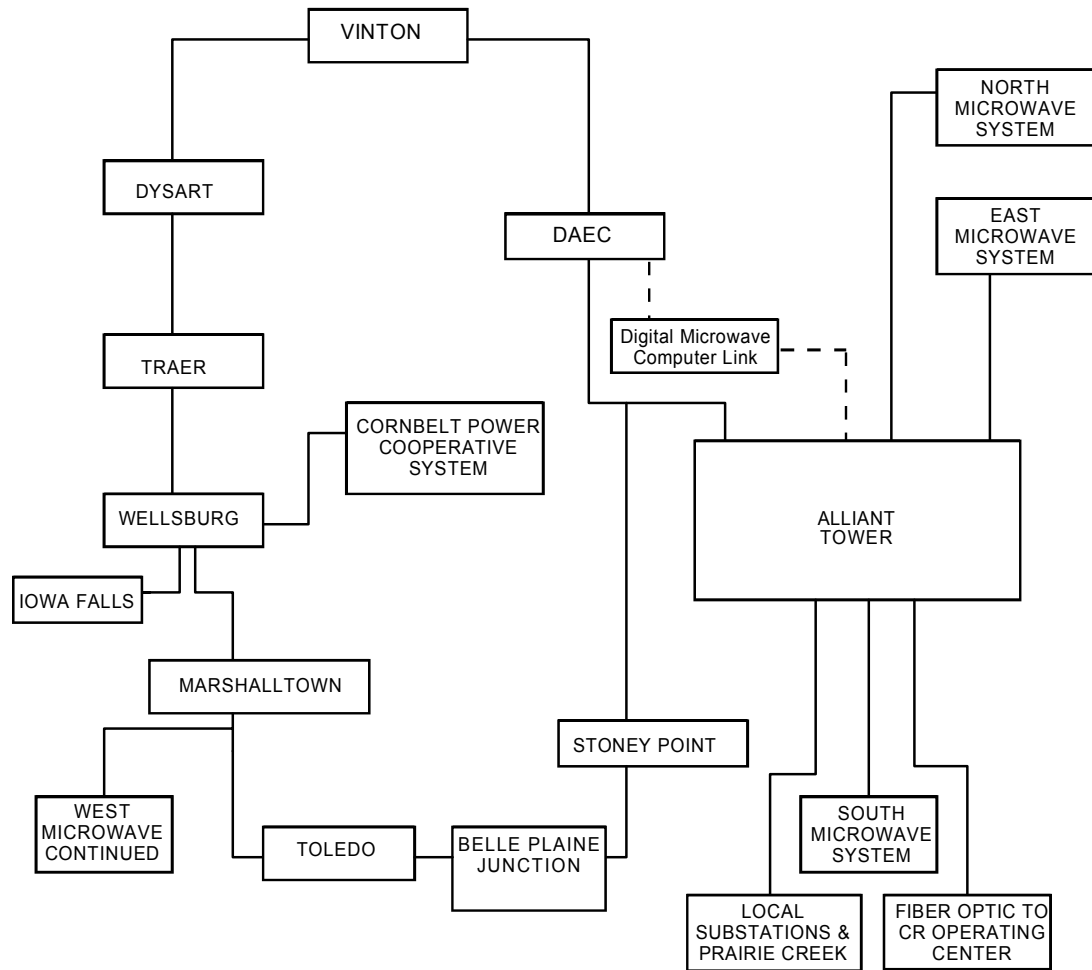
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FIGURE F-4
POINT-TO-POINT RADIO SYSTEM



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FIGURE F-5
MICROWAVE FACILITIES



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