

1.0 The Plan provides for establishing communications on a continuous (24 - hours per day) basis with the following organizations:

- 1) The State of New Jersey
- 2) The State of Delaware
- 3) Salem County New Jersey
- 4) Cumberland County New Jersey
- 5) New Castle County Delaware
- 6) Kent County Delaware
- 7) Lower Alloways Creek Township
- 8) PSEG (Internal Communication)
- 9) U.S. NRC

The actual notification methods are outlined in Section 6.0 of this Plan.

2.0 General Equipment and System Descriptions

To assure that external notifications and communications are available during an emergency, PSEG Nuclear LLC maintains both dedicated and commercial communications systems as part of its emergency response capabilities. Table 7-1 summarizes the dedicated and commercial communications services maintained in emergency response facilities on and offsite. The following descriptions of the available communications systems emphasize the features which distinguish them. All are highly reliable telephone systems.

2.1 NETS

The Nuclear Emergency Telecommunications System (NETS) is a privately controlled, self-contained telephone exchange that operates as a closed system, not accessible from other phone exchanges. This feature allows the system to be dedicated to emergency response use. The system may use either PSEG microwave, commercial telephone system microwave, fiber optics, or buried cable transmission as needed. The exchange switching equipment is maintained at the Environmental & Energy Resource Center (EERC). As an independent system with an uninterruptible power supply, it may operate with or without local phone service or external power.

2.2 Centrex/ESSX 1

The Centrex/Electronic Switch System Exchange I (Centrex/ESSX 1) is also a privately controlled exchange, which PSEG operates with its own microwave signal system. This system is also independent of local phone service, since each circuit is independently wired. The microwave signal is generated from corporate facilities in Newark, NJ, separated from any local effects of weather or telephone use. The exchange is accessible from other exchanges, but circuits are located only in PSEG facilities. It is considered the primary backup for the NETS system.

2.3 DID _____

Direct Inward Dial (DID) system is named for the dominant feature of the commercial telephone service provided by the local telephone company for the site. DID allows station telephones to be extensions or tied lines of the same systems. These exchanges can take advantage of backup power supplies provided to the stations, and may use either PSEG microwave, commercial telephone system microwave, or buried cable transmission systems to maintain external communications. This commercial telephone service is available as an additional backup for the NETS and Centrex/ESSX 1 system.

3.0 Emergency Communications with the States of New Jersey and Delaware and Counties of Cumberland, Salem, Kent, and New Castle

3.1 Primary Emergency Communications

The primary communications system between Salem/Hope Creek Generating Stations, the states, and counties is the NETS system described above. NETS telephones are located in onsite emergency response facilities, and offsite emergency facilities of PSEG, as well as the Emergency Operations Center Facilities of the states and counties.

The system is used to notify the states for all emergency action levels and provide emergency communications with the counties. See Table 7-1 for a summary of NETS equipment and locations.

3.2 Secondary Communication

The secondary communications to the New Jersey and Delaware states and counties are provided by both the Centrex/ESSX 1 and DID systems, described above, which are strategically placed throughout emergency facilities. Both systems can be used to contact the states and counties via commercial telephone lines.

4.0 Additional Methods for State and County Contacts

EMRAD (Emergency Radio) radio frequency communications equipment is located in the Control Room areas in each station and the EOF, and provide still another means of contacting the state of New Jersey, and the New Jersey counties of Salem and Cumberland.

National Attack Warning and Alert System (NAWAS) communications, which are available in the Control Room areas, TSC, and the EOF, provide still another means of contacting the state of Delaware.

5.0 Emergency Communications with the NRC

A dedicated communications system with the NRC, the Federal Telecommunications System (FTS); consists of direct lines to the NRC. FTS lines are used to provide general accident information. These telephones are installed in the Control Rooms, TSC's, and the EOF.

6.0 PSEG Internal Communications

6.1 Telephone Systems

Table 7-1 summarizes the equipment and locations for NETS access. Those locations include all PSEG emergency response facilities on and offsite.

As described above, NETS telephones are also used for PSEG internal communications for emergency response.

The NETS is used to initiate and expedite implementation of Emergency Plan Procedures. Any NETS locations may contact any other NETS location or access commercial back up services.

Centrex/ESSX 1 system also acts as a backup system for NETS in the PSEG internal communications network. DID, as described earlier, is the principal telephone system used for normal business at the site and is also a backup system for emergency response.

All PSEG emergency facilities on and offsite can be contacted from these systems.

6.2 Salem and Hope Creek Stations' Alarm Systems

6.3 Fire Alarm

At Salem Station the fire alarm consists of a location-coded series of tones that is broadcast over the PA system via the tone generator in the PA system. It is initiated by any of the following:

- 1) Automatic sprinkler actuation

- 2) Smoke detector actuation
- 3) Manual pull-stations

Each fire alarm sequence of tones indicates a different location. The fire alarm location code is broadcast three (3) times over the PA system and automatically shut off.

At Hope Creek station fire alarms are received on the computer in the Control Room. Control Room operators then contact Fire Protection for response.

6.4 Radiation Alert Alarm

The Salem and Hope Creek Stations radiation alert alarms are continuous, pulse-tone sounds, generated electronically in the tone generators of the PA systems. They are broadcast through-out each station via the PA page channels. The alarms are initiated manually by pushbutton from each control room.

6.5 Local Area Evacuation Alarms

There are three local area evacuation alarms at each station.

At Hope Creek Generating Station the alarms are:

- 1) Reactor Building High Radiation Alarm
- 2) Refueling Floor Evacuation Alarm
- 3) Emergency Diesel Room Evacuation Alarm

At the Salem Generating Station, the three alarms are:

- 1) Containment Evacuation Alarm
- 2) Fuel Handling Building Evacuation Alarm
- 3) Emergency Diesel Room Evacuation Alarm

These alarms signal that evacuation of these local areas is required immediately. These alarms are independent of each other and local only. They are loud klaxons.

6.6 Refueling Floor Evacuation (HCGS)/Containment Evacuation (SGS)

The containment evacuation alarm, a klaxon, is sounded when the neutron count rate from source-range nuclear instrumentation exceed a preset level while the reactor is shut down.

This condition sounds the containment evacuation alarm and is annunciated in the control room. When this alarm is sounded, all personnel in the containment must exit, maintaining (or establishing) containment integrity as they leave. The alarm continues to sound as long as the neutron flux remains above the setpoint.

This alarm system is required by 10 CFR 70, and must be operable whenever nuclear fuel is stored in the fuel building. It has been designed in accordance with ANSI N16.2, 1969, to meet requirements for a Criticality Accident Alarm System.

6.7 Refueling Floor Evacuation Alarms (HCGS)/Fuel Handling Building (SGS)

The detectors for the fuel building evacuation alarm are gamma monitors that serve both as area monitors and as criticality monitors for the fuel building.

If the activity level at either detector exceed the setpoint, the evacuation alarm is sounded. This alarm indicates the entire fuel building should be evacuated. This condition is annunciated in the control room (i.e., high radiation at specified location); the radiation monitoring panel shows that the detector has triggered the evacuation alarm. The alarm sounds as long as the set point is exceeded.

This alarm system is required by 10 CFR 70, and must be operable whenever nuclear fuel is stored in the fuel building. It has been designed in accordance with ANSI N16.2, 1969, to meet requirements for a Criticality Accident Alarm System.

6.8 Emergency Diesel Generator Room Evacuation Alarm

Each emergency diesel generator room (four at HCGS, six at SGS) has an independent alarm system that sounds if a heat detector in a diesel room is actuated, indicating fire. The diesel room in which the alarm is sounding should be evacuated immediately. The heat detector in each diesel room, upon actuation, activates these system responses:

- 1) Alarms in the control room (part of the fire detection system),
- 2) Sounds the evacuation alarm in that particular emergency diesel room,
- 3) After the preset time delay, automatically discharges the carbon dioxide (CO₂) fire extinguishing system for the effected diesel room into that room. (Note: CO₂ System discharge can also be manually initiated from outside the diesel room at any time via pullbox).

Thus, the emergency diesel room evacuation alarm warns anyone present that there is both a fire danger as well as an impending CO₂ danger.

7.0 Salem and Hope Creek Stations Public Address (PA) Systems

Each station PA is a completely transistorized voice communication system. Hope Creek maintains six voice channels: one page and five party. Salem Station also maintains six voice channels: one page and five party. The system is designed for use in extreme environmental conditions such as dust, moisture, heat and noise. The system consists of handsets, speakers and their associated amplifiers.

The power for this system is 120 volts AC from an inverted DC source to provide reliable communications during an emergency.

8.0 Salem and Hope Creek Stations Radio Systems

One of the stations' radio systems is the VHF security radio system. This radio system is used for security duties and is routinely tested in accordance with the Station Security Plan.

A second radio system is the Operations and Fire Protection Departments' UHF radio system. This multi-frequency system is used routinely by both station Operations Departments and the Fire Protection Department. When an emergency event is declared, these radio frequencies serve both station Operations Support Centers (OSC).

A third, 900-MHz radio system is used for both onsite and offsite field monitoring team communications. Two specific frequencies (talk groups) are assigned for field monitoring team communications. One talk group is assigned for onsite communications between the Control Rooms, TSCs, and onsite radiation monitoring team with a second talk group assigned for communications between the EOF and offsite radiation monitoring teams. In addition to the installed and portable 900-MHz radio hardware, backup communications devices are supplied to onsite and offsite field teams. The 900-MHz radio system is routinely tested in emergency preparedness drills and monitored by the IT department. This test frequency and monitoring has been determined to be more conservative than required by NUREG-0654 or 10CFR50, Appendix E.

9.0 Notification of Owner Controlled Area

Notification of the Owner Controlled Areas, also discussed in Section 11, Protective Response, is provided for the protection of all personnel located external to the stations' protected area. The primary notification method for the owner controlled area is an onsite siren system which directs evacuation. The backup means for notifying the owner controlled area is through the use of security force members making specific contacts or utilizing public address equipment.

**TABLE 7-1
NUCLEAR BUSINESS UNIT
EMERGENCY RESPONSE FACILITIES COMMUNICATIONS SUPPORT**

*LOCATION	NETS LINE	DID LINE	Centrex/ESSX 1 LINE	FAX MACHINES	**SPECIAL EQUIPMENT
SA U/1 CR	2	2	1	-	A B G H I J
SA U/2 CR	2	2	1	-	A B G H I J
SA SMO	5	3	1	1	D F I J K
SA OSC	4	4	1	-	A E I
SA CP	3	2	-	1	E I
SA TSC	¹ 22	14	4	2	C E F I J L
EOF	35	21	14	4	D E F J L
ENC	18	-	-	3	36 Commercial Lines
HC CR	3	2	1	-	A G H I J
HC SMO	3	4	1	1	B D F G I J K
HC OSC	4	2	1	-	A E I
HC CP	3	2	-	1	I
HC TSC	21	13	4	2	B C E F I J L

Note ¹ - Plus three NRC - NETS bridge extensions

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SA = Salem Generating Station
U/1 = Unit 1
U/2 = Unit 2
CR = Control Room
OSC = Operations Support Center
EOF = Emergency Operations Facility

HC = Hope Creek Station
CP = Control Point
TSC = Technical Support Center
SMO = SM Office Complex
ENC = Emergency News Center

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A = UHF Ops/FP/OSC RADIO
B = VHF Security RADIO
C = OSC RADIO MONITOR
D = EMRAD RADIO
E = WALKIE-TALKIES
F = NAWAS

G = EMERGENCY EXT. 3333
H = SYSTEM OPERATOR (LOAD DISPATCHER)
I = PLANT PAGE
J = NRC/ENS (FTS 2000)
K = STATE CALLBACK
L = 900-MHz RADIO SYSTEM

**TABLE 7-1 (Cont.)
NUCLEAR BUSINESS UNIT
EMERGENCY RESPONSE FACILITIES COMMUNICATIONS SUPPORT**

LOCATION	NETS	SECONDARY NUMBERS
NJ STATE POLICE (NJSP)	8	2
NJ – BNE	3	2
SALEM COUNTY	2	1 – NORMAL 1 – 24 HRS.
CUMBERLAND COUNTY	2	1 – NORMAL 1 – 24 HRS.
LOWER ALLOWAYS CREEK	1	1
DELAWARE (DEMA)	4	2
DEL STATE POLICE (DSP)	1	1
KENT COUNTY	1	1
NEW CASTLE COUNTY	1	1
WILMINGTON, DE (WDEL)	1	
MEMORIAL HOSPITAL OF SALEM COUNTY	1	
Telecopiers (fax machines) provided (1 each) to the NJSP, NJ-BNE, DSP and DEMA.		
LOCATION	NETS	
PSEG Security Department	2	
PSEG Fire Department	1	