

## MORGAN COUNTY COMMUNICATIONS PLAN

Annex B (Communications) to the Morgan County Emergency Operations Plan.

### I. PURPOSE

The purpose of this annex is to outline communications procedures and capabilities to be employed in the event of a large-scale emergency in the county.

### II. SITUATION AND ASSUMPTIONS

#### A. Situation

1. The Emergency Communications Center is located on the second floor of the M&M Fire Department. Sufficient communications are available to provide the communications necessary for most emergencies. In severe emergencies, augmentation may be required.

#### B. Assumptions

1. An Emergency Communications Center (ECC) exists within the M&M Fire Department (EMA) and will be established within the EOC upon its activation. Additional communication equipment will be requested through the local amateur radio group.
2. The following agencies/departments will deploy radio operators with radios to the EOC:
  - a. Sheriff
  - b. Amateur radio
  - c. M&M Fire Department
  - d. McConnellsville Police
  - e. County Engineer

### III. CONCEPT OF OPERATIONS

#### A. Notification

1. The Sheriff's Department or other source will notify the Emergency Management Director, that a major emergency situation has occurred/is imminent.
2. The Emergency Management Director will then notify the Chairperson of the Board of Commissioners to apprise of the situation.
3. At the time the decision to activate the EOC is made, notification to all EOC representatives will be accomplished as follows:
  - a. Morgan County Sheriff notifies EMA Director
  - b. Emergency Management Director notifies:
    - 1) County Commissioners

- 2) Morgan County Amateur Radio Emergency Communications Coordinator
  - 3) EMA Administrative Assistant
  - 4) Morgan County Communications Officer
  - 5) Ohio EMA
  - 6) Morgan County Sheriff (if not notified)
- c. Morgan County Amateur Radio Emergency Communications Coordinator notifies:
- 1) 6 Volunteer Fire Chiefs (as applicable)
  - 2) Telephone Service Managers (as applicable)
  - 3) Electric Company Service Managers
  - 4) Electric Company Line Supervisor
  - 5) Commander of Civil Air Patrol
- d. Morgan County Communications Officer notifies:
- 1) Mayors of villages (as applicable)
  - 2) Trustees of Townships (as applicable)
  - 3) Morgan County PIO
  - 4) Gas Company Service Manager (as applicable)
  - 5) Radiological officer
  - 6) American Red Cross (as applicable)
- e. President of the Board of County Commissioners notifies:
- 1) Clerk of Board of County Commissioners
- f. Clerk of Board of County Commissioners notifies:
- 1) Morgan County Engineer
  - 2) Morgan County Human Services
  - 3) Morgan County Auditor
  - 4) Morgan County Health Department
  - 5) Morgan County Treasurer
  - 6) Morgan County Court of Common Pleas
  - 7) Morgan County Prosecutor
  - 8) Morgan County School Superintendent
  - 9) Morgan County Recorder
  - 10) Morgan County Veterans Service Officer
- g. Township Trustees of affected area notify:
- 1) Road Maintenance Crews
  - 2) Emergency Volunteers needed

B. EOC Activation

1. Upon arrival at the EOC, the Emergency Management Director will prepare the ECC for activation.
2. The Communications Officer and other communications staff will report to the ECC upon notification of EOC activation. They will take actions to secure and make operable such communications

equipment and supplies as are necessary to carry out their assigned duties.

C. Emergency Communications Center

1. The ECC is a vital part of the EOC. It's purpose is to provide both primary and backup communications support for the EOC.
2. The ECC is capable of being operated continuously for the duration of the emergency. Maximum staffing will be maintained during periods of full activation of the EOC. Communications staff will work 12-hour shifts.
3. Primary communications with EOC will be conducted by telephone whenever possible. If telephones are inoperable, information will be relayed by radio. Amateur radios will be utilized to provide back-up communications to disaster sites and shelters, lodging and feeding facilities.
4. Radio operators for the various communications equipment will be supplied by the departments/agencies communicating on that equipment.

D. Alternate EOC

In the event the primary EOC is unavailable for activation, the Morgan County Health Department located at 4275 North State Route 376 NW will be used as the alternate EOC. Also Center, Chesterhill, M&M, Pennsville, Reinersville, and Stockport Fire Departments.

E. Phases of Emergency Management

1. Mitigation
  - a. Further development of an adequate communications system:
    - 1) Procurement of additional equipment
    - 2) Systems integration (netting)
    - 3) Communications operating training
  - b. Formulation of plans for additional improvement to the communications systems.
  - c. Coordination of communication capabilities with surrounding counties and State EOC.
  - d. Development of a radio repair capability under emergency conditions.
2. Preparedness
  - a. Development of plans and SOPs for ECC.

- b. Test and maintain communications equipment on a regularly scheduled basis.
  - c. Arrange training programs for all communications staff including volunteers and repair personnel.
  - d. Identify potential sources of additional equipment and supplies.
3. Response
- a. Activation of the ECC.
  - b. Implementation of emergency communications procedures.
  - c. Activate backup communications capabilities, as necessary.
  - d. Utilize ECC message forms for the recording of all incoming radio transmissions.
  - e. Insure 24-hour communications capability for the duration of the emergency.
4. Recovery
- a. Maintenance of emergency communications systems for the duration of the emergency period.

#### IV. ORGANIZATION AND ASSIGNMENT OF RESPONSIBILITIES

##### A. Organization

- 1. During large-scale emergencies, communications personnel will coordinate response efforts and assist other agencies/departments to the extent possible with the provision of communications capabilities.
- 2. The EOC Communications Officer is the President of the Morgan County Amateur Radio Club.

##### B. Communications Staff Responsibilities

Radio operators, while operating their equipment in the ECC, will remain under direct control of their own office, but work under the Communications Officer.

Task Assignments:

- 1. Provide communications in an emergency.
- 2. Retain Message Log.
- 3. Handles messages in accordance with Standard Operating Procedures.

#### V. DIRECTION AND CONTROL

- A. The Morgan County EMA Communications Officer will relocate to the EOC upon its activation. From this location, he or she will provide direction and control over all communications activities within the county and coordinate with other EOC representatives.

- B. Field forces of each supporting agency with radio communications capabilities in the ECC will report activities and current status of on-site operation to the EOC.

## VI. CONTINUITY OF GOVERNMENT

- A. The line of succession for the Morgan County Communications Officer is as follows:
  - 1. Assistant Communications Officer
  - 2. Chief Radio Operator
- B. Refer to Tab 11, Procedures for the Relocation and Safeguarding of Vital Records in the Basic Plan and Tab 3, Procedures for the Protection of Government Resources, Facilities, and Personnel in Annex N, Resource Management.

## VII. ADMINISTRATION AND LOGISTICS

- A. Communications
  - 1. Sheriff's Department
    - a. Radio Frequencies:
      - 1) 39.48 MHz (Morgan County Sheriff's Department)
      - 2) 39.58 MHz (Law Enforcement, Low Band, Statewide)
      - 3) 39.70 MHz (Morgan County Law Enforcement)
      - 4) 465.06250/465.0375 (UHF used by McConnellsville PD)
      - 5) 154.935 (Law Enforcement Emergency Radio Network (LEERN))
    - b. Communication Equipment:
      - 1) LEADS System
      - 2) 7 Mobile Radios
      - 3) 7 Portable, hand-held radios
      - 4) 1 Base Station
      - 5) 1 station equipped with 154.935 MHz. Law Enforcement Emergency Radio Network (LEERN)
    - c. Communications Capabilities

The Sheriff's Department can communicate with or monitor the following:

      - 1) Communicate with all Sheriff's Department vehicles (freq. 39.48MHz)
      - 2) Monitor all Fire Departments within the county (freq. 33.68 MHz)
      - 3) Monitor the following Fire Departments in surrounding counties (See Tab 4 to annex F)
      - 4) Communicate with/monitor State Highway Patrol on frequency 154.935 MHz.
      - 5) Other: Scanner

- 6) Telephone Number
2. McConnellsville Police Department
- a. Radio frequencies
    - 1) 39.580 MHz
    - 2) 39.480 MHz
    - 3) 39.700 MHz
    - 4) 465.0625 MHz
    - 5) 465.0375 MHz
    - 6) 453.0500 MHz
    - 7) 458.050 MHz
  - b. Radio Equipment
    - 1) Two (2) City police vehicles are equipped with 2-way radios.
    - 2) LEADS System installed at headquarters
    - 3) 5 Portable, hand-held radios
    - 4) No Base Stations
    - 5) No Vehicles equipped with 154.935 MHz Law Enforcement Radio Network (LEERN)
  - c. Communications Capabilities
    - 1) Direct communications with all personnel traveling in McConnellsville Police Department vehicles.
    - 2) Communicates with Sheriff's Department (frequency 39.70 MHz)
    - 3) Communicates with McConnellsville Village on frequency 453.0500 MHz
    - 4) Other: M&M Fire 453.0500 MHz
    - 5) Telephone
3. M&M Fire Department
- a. Radio Frequencies
    - 1) 33.86 MHz
    - 2) 33.68 MHz
    - 3) 33.46 MHz
    - 4) 155.220 MHz
  - b. Communications Equipment
    - 1) All Fire Department vehicles are equipped with radios. (33.68/33.86 MHz)
    - 2) 2 Bases (33.68/33.86 MHz)
    - 3) 15 Portables (33.68/33.86 MHz)
    - 4) 45 Pagers (33.86 MHz)

- c. Communications Capabilities
  - 1) Can talk to:
    - a) Personnel traveling in all M&M Fire Department vehicles.
    - b) All volunteer fire departments in Morgan County.
    - c) All volunteer fire departments in other counties.
    - d) State Fire Marshal's Hazardous Materials response truck
    - e) Ambulances on frequencies 33.68/33.86 MHz
    - f) Other: 155.220/155.340/155.280 MHz
  - 2) Monitoring capabilities from base station with local agencies:
    - a) McConnelsville Police
    - b) Sheriff's Department
    - c) Other surrounding counties
  - 3) Telephone Number
- 4. County Engineering Department
  - a. Radio Frequency:
    - 1) 151.040 MHz
  - b. Radio Equipment:
    - 1) 1 Base Unit
    - 2) 1 mobile units (Sedan)
    - 3) 22 County Engineer's Department trucks equipped with radios.
    - 4) 1 Portable
  - c. Communications Capabilities
    - 1) Direct communications with all county Engineer's Department personnel traveling in department trucks and Sedan.
    - 2) Telephone Number
- 5. Amateur Radio (Data not currently available; expect to organize Morgan County Radio Club by 1 January 1992.)
  - a. Radio Frequencies
    - 1) 147.195 MHz Repeater out
    - 2) 146.52 MHz Simplex
    - 3) 146.61 MHz Zanesville Repeater
    - 4) 145.33 MHz Marietta Repeater
  - b. Radio Equipment (Ability to monitor all other local government frequencies)

- 1) 5 Mobiles
  - 2) 0 Pagers
  - 3) 4 Portables
6. Rescue Squads (M&M – 3; Chesterhill – 2; Stockport – 2)
- a. Radio Frequencies
    - 1) 33.68 MHz (M&M, Chesterhill & Stockport)
    - 2) 33.86 MHz (M&M & Chesterhill)
    - 3) 155.220 MHz (M&M, Chesterhill & Stockport)
  - b. Radio Equipment
    - 1) No Mobiles
    - 2) No Pagers
    - 3) 6 Portables
  - c. Communications Capabilities
    - 1) Can talk to:
      - a. All Fire (Frequencies 33.68/33.86 MHz)
      - b. Morgan County Sheriff (33.68 MHz)
7. McConnellsville Street and Utilities Departments
- a. Radio Frequencies
    - 1) 453.050 MHz
    - 2) 458.050 MHz
  - b. Radio Equipment
    - 1) 6 Mobiles
    - 2) 1 Base Station
    - 3) 12 Portables
    - 4) 2 Control Stations (1 Mayor's Office & 1 M&M FD)
  - c. Communications Capabilities
    - 1) Can talk to the McConnellsville Police Department on 453.050 MHz
8. Morgan County Clinic
- a. Radio Frequency
    - 1) 155.220 MHz
  - b. Radio Equipment
    - 1) 1 Remote at M&M Fire Department
    - 2) No Base Stations

- 3) No Mobiles
- 4) No Portables

c. Communication Capabilities

- 1) Can talk to:
  - a) All ambulance frequency (155.220 MHz)
  - b) Other hospitals
    - (1) Bethesda Hospital
    - (2) Good Samaritan Hospital
    - (3) Marietta Memorial Hospital
    - (4) O'Bleness Hospital
    - (5) Selby General Hospital

9. Morgan County Schools

a. Radio frequencies

- 1) 461.075 MHz (Receiver)
- 2) 466.075 MHz (Base to Repeater to vehicles)

b. Radio Equipment

- 1) 1 Base Station
- 2) 4 Portables
- 3) 35 Mobiles

c. Communications Capabilities

- 1) Can talk to 35 vehicles within school system equipped with radios and the McConnellsville Police Department

B. EOC Communications (Communication installation dependent upon availability of funds. Fire Department equipment to be utilized on an interim basis)

1. Telephones

- a. The EOC is equipped with 2 phone lines. Each will be equipped with incoming/outgoing call capacity.
- b. The EOC has a total of 1 incoming trunk line.
- c. Commercial telephone companies will be contacted by the Emergency Management Director to install additional lines should they be needed upon EOC Activation.
- d. EOC Telephone Numbers:
 

1) _____	5) _____
2) _____	6) _____
3) _____	7) _____
4) _____	8) _____

2. Radios

- a. No radios are currently installed in the EOC.
  - b. The following agencies/departments will set up radios in the EOC upon its activation:
    - (1) Morgan County Sheriff's Department 39.48 MHz frequency.
    - (2) Morgan County Emergency Management Agency and Office of Homeland Security 155.805 MHz (County EMA Direction and Control Frequency)
    - (3) M&M Fire Department 33.68 MHz frequency.
    - (4) McConnelsville Police Department 39.70 MHz frequency.
    - (5) Morgan County Engineer 151.040 MHz frequency.
    - (6) Morgan County RACES
  - c. Responding agencies will communicate with the EOC via their own radios whenever possible.
  - d. Amateur radio operators will be stationed at activated shelters to provide communications with the EOC if telephones are not available.
  - e. Adjacent county EOCs will be contacted by telephone whenever possible. If phones are inoperable, information will be relayed by the EMA radio net. Frequency 155.805 MHz
  - f. State EOC will be contacted by telephone whenever possible. If phones are inoperable, information will be relayed by the EMA radio net on frequency 155.805 MHz.
  - g. Communications with the federal government will be carried out through the state.
  - h. Each EOC staff member will be requested to leave an emergency contact number at the security desk upon exiting the EOC to insure expeditious recall if warranted.
3. Other Communications Systems in EOC
- a. Law Enforcement Automated Data System
  - b. NOAA Weather Radio System
  - c. NOAA Weather Satellite Data System
  - d. Facsimile, Telephone Number:
  - e. Cable TV
  - f. VAX Information from Morgan County Extension Service is available by runner from 155 East Main Street, 3<sup>rd</sup> Floor, McConnelsville.

C. Training and Exercises

- 1. Amateur Radio members participate in the following training/exercise functions: (Subsequent to 1 January 1992)
  - a) A minimum of 1 amateur exercise per year.
  - b) Weekly SKYWARN exercises.

- c) Amateur radio exercises every month.
- 2. Radio operators of emergency response organization/agencies are trained by each respective employment department.
- 3. EMA emergency communications personnel will participate in a full-scale disaster response exercise every three years, and in orientation, tabletop or functional exercises as necessary.

D. Reports and Forms

- 1. All participating agencies/organizations are required to submit an after-action report to the County Emergency Management Director within 30 days after the termination of emergency response activities.

VII. PLAN DEVELOPMENT AND MAINTENANCE

- A. All departments/organizations within the county providing emergency communications are responsible for reviewing this annex on an annual basis commencing one year from the approval date of this document, and submitting new/updated information to the County Emergency Management Director.
- B. All departments/organizations within the county providing emergency communications are responsible for developing and maintaining communications SOPs, mutual-aid agreements, personnel rosters, including 24-hour emergency telephone numbers and communications equipment inventories.

IX. AUTHORITIES

- A. Authorities  
Federal Communications Commission (FCC) Rules and Regulations
- B. References  
Not used. See Item IX.B. of the Basic Plan.

X. ADDENDUMS

Appendix 1 – Nuclear Attack Procedure – Communication Malfunctions Due to Electromagnetic Pulse (EMP).

XI. AUTHENTICATION

12/08/03

Date

Roger Calendine

Communications Coordinator

MORGAN COUNTY COMMUNICATIONS PLAN  
Appendix 1 (Nuclear Attack) to Annex B (Communications) to the Morgan County  
Emergency Operations Plan

NUCLEAR ATTACK PROCEDURES  
COMMUNICATION MALFUNCTIONS DUE TO  
ELECTROMAGNETIC PULSE (EMP)

I. PURPOSE

This Appendix covers procedures to mitigate the generation of EMP by a nuclear detonation, which causes malfunctions of instrumentation and other electronic equipment.

II. SITUATION AND ASSUMPTIONS

- A. EMP poses a potential threat to radio and TV transmitters; public safety radio, (i.e., police, fire, public works, emergency amateur radio organizations, etc.); telephone systems; electric power; and Emergency Operations Center communications capability.
- B. Assumptions
  - 1. Many types of electrical/electronic equipment could be affected or even knocked out by the EMP from high altitude bursts.
  - 2. Certainly, some automobile ignition systems could fail, as could some portions of telephone and radio communications, navigational aids, and electrical/electronic equipment.

III. CONCEPT OF OPERATIONS

A. General

Electromagnetic pulse protection is recommended for all radio communications facilities. Consideration should be given to the EMP protection and/or shielding of base stations, repeaters, antenna systems, emergency generators, power distribution, coaxial cables, remote control lines, transmitters and receivers. PIP protection philosophy is based on protection from three environmental areas of concern:

- 1. Ground current effects
- 2. Magnetic field effects
- 3. Electric field effects

Electrical and electronic systems may be disrupted by PIP in two distinct ways:

- 1. Functional Damage: This requires replacement of a component or parts of a unit, perhaps a circuit board or a fuse.

2. Operational Upset: This is a temporary interruption or impairment of electronic equipment such as opening of circuit breakers or erasure of a portion of the memory of a computer.

#### B. Vulnerability of Broadcast Radio

PIP poses a potential threat to AM, FM, and TV broadcast transmitters. There are three areas of concern regarding PIP damage to radio station operation: (1) pulse energies collected by large broadcast antennas; (2) conducted pulses from power lines and other long external conductors; and (3) directly induced transient currents in low voltage circuits.

Transistors are especially susceptible to low-level energy pulses induced in connected circuits. Vacuum-tube transmitters are much less vulnerable.

Local broadcast station operators should be access to the PIP protection publications. PIP protection also protects against lightening and surges of power on commercial lines.

#### C. Vulnerability of Public Safety Radio

Police, fire, public works, and other local government radio nets typically perform a crucial role in disaster operations. To these systems can be added emergency amateur radio organizations, such as RACES (Radio Amateur Civil Emergency Service). Many base stations cannot operate in the absence of commercial power. Unless these facilities are equipped with standby electric power and EMP protective devices, they are likely to go off the air in a nuclear emergency.

Mobile units in these systems have battery power supplies and relatively short antennas. They are most likely to remain operable, particularly older models, most of which have vacuum-tube circuits. Mobile-to-mobile communications will be important as an alternative in the event of loss of a base station.

#### D. Vulnerability of Telephone Systems

Some components of conventional telephone plants are very sensitive to the effects of EMP. Even the rugged and conservative design and construction used in telephone systems are not sufficient to have high confidence that telephone service will operate reliably immediately after exposure to EMP.

The telephone system is the one system that cannot be disconnected in the way a radio transmitter can. Therefore, it would be prudent to plan for maximum use at telephone service between temporarily immobilized field units and dispatchers so long as service continues, reserving the radio service until the main threat of PIP damage is past.

#### E. Vulnerability of Electric Power

Power lines exposed to EMP will have induced in them currents and associated surges in much the same way that antennas collect radio signals.

For power systems, this means that a high-altitude will induce surges on all the myriad of power conductors, control and communications cables, interconnecting the entire system.

Standby electric generators could reduce the effects of EMP pulses on the commercial power system providing it can be disconnected before the first detonation. Because this must be done manually, personnel should make provisions to react promptly to attack warning.

No reliance should be placed on the presumed availability of electric power during and immediately following a nuclear attack. Restoration of service may require hours or days, so provision for protected standby power is a must for facilities that must function soon after attack.

F. Vulnerability of Local Emergency Operations Center

The local EOC represents a key nerve center for emergency operations. As such, it must be in a position to communicate with others during and after a nuclear attack. Since EMP from high-altitude detonations can cripple communications anywhere in the country, every locality must concern itself with protection of its EOC against EMP effects.

It is easy to include EMP protection in both the budget and construction of the new EOC, but it is both tedious and expensive to retrofit existing installations.

For the private individual or business, as well as for smaller EOCs, it is worthwhile to consider intuitively effective ideas. For example, a sensitive unit is much less vulnerable if the “power plug is pulled” and left a foot or so from the power source. Additional communication protection can be maintained by placing equipment in a shielded enclosure such as boxes, shielded racks, or by placing or wrapping/storing equipment in tin foil.

Operating procedures should provide for switching to emergency power at the maximum readiness condition or at attack warning rather than waiting until weapons detonate or power is lost.

Operating procedures should provide for switching to emergency power at the maximum readiness condition or at attack warning rather than waiting until weapons detonate or power is lost.

The next step is to protect communication equipment against lead-in cables. Devices for this purpose, such as gas-gap shunting devices that react very rapidly, are now available commercially at low cost. At slightly higher costs, filters can be added to transient suppressors and will significantly increase the level of protection.

G. The concept of operation for this contingency is summarized in Attachment 1 and 2 to this appendix.

IV. ORGANIZATION AND ASSIGNMENT OF RESPONSIBILITIES

A. Organization

Not used. See Section IV.A. of the Communications Annex.

B. Responsibilities

Not used. See Section IV.B. of the Communications Annex.

V. DIRECTION AND CONTROL

Not used. See Section V. of the Communications Annex.

VI. PLAN DEVELOPMENT AND MAINTENANCE

Not used. See Section VI of the Communications Annex.

VIII. AUTHORITIES AND REFERENCES

A. Authorities

Not used.

B. References

Not used. See Item IX.B. of the Basic Plan.

IX. ADDENDUMS

Attachment 1 Types of Suppressors

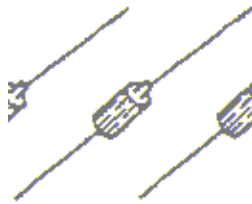
Attachment 2 Operational Anti-EMP Actions

# TYPES OF SUPPRESSORS

## VARISTORS



## ZENER DIODES



## SPARK GAPS



## FILTERS



## TRANSFORMERS



## MORGAN COUNTY COMMUNICATIONS PLAN

Attachment 2 to Appendix 1 (Nuclear Attack Procedures) to Annex B (Communications)

### OPERATIONAL ANTI-EMP ACTIONS

1. Maintain an extra supply of spare parts and standby components so that any EMP damage can be rectified as quickly as possible.
2. Shift to emergency power at the earliest possible time.
3. Rely on telephone contact during the threat period as long as it remains operational.
4. If radio communication is essential during the threat period, use only one system at a time. Disconnect all other systems from antennas, cables, and power (do not use low-voltage switches but pull the plug), and store in protected enclosure.
5. Disconnect radio base stations from antennas and power lines when not in use.
6. Plan for mobile-to-mobile backup communications.