

DMB

October 12, 1982

Docket No. 50-315
Docket No. 50-316

American Electric Power Service
Corporation
Indiana and Michigan Electric Company
ATTN: Mr. R. F. Hering
Vice President
Post Office Box 18
Bowling Green Station
New York, NY 10004

Gentlemen:

We have received the attached Federal Emergency Management Agency (FEMA) letter dated September 9, 1982, and associated final exercise evaluations on the offsite emergency preparedness exercises conducted on October 9, 1980, and March 30, 1982, for the state of Michigan and Berrien County. These final exercise evaluations list some recommendations (which are referred to in the FEMA letter and attachments as deficiencies) regarding the offsite emergency response plans for the area around the Donald C. Cook Nuclear Station. The response of the State of Michigan to the reported recommendations is also attached.

We fully recognize that the recommendations to be implemented may involve actions by other parties and political institutions which are not under your direct control. Nonetheless, we would expect the subject of offsite preparedness for the area around the Donald C. Cook facility to be addressed by you as well as others.

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American Electric Power Service Corporation 2

In accordance with 10 CFR 2.790 of the Commission's regulations, a copy of this letter and the enclosures will be placed in the NRC's Public Document Room.

Sincerely,

C. J. Paperiello
for J. A. Hind, Director
Division of Emergency Preparedness
and Operational Support

Attachments: As stated

cc w/attach:
J. E. Dolan, Vice Chairman
Engineering
W. G. Smith, Jr., Plant Manager
DMB/Document Control Desk (RIDS)
Resident Inspector, RIII
Ronald Callen, Michigan
Public Service Commission
EIS Coordinator, USEPA
Region 5 Office
Mr. E. W. Hakala, Deputy Regional
Director, FEMA, Region V

RIII
PH
Phillips/sv
10/6/82

RIII
MA
Axelson

RIII
CJP
Paperiello
10/7/82

RIII
HR
Reyes
10/7/82

RIII
CJP
Hind
10/8/82



Federal Emergency Management Agency

Washington, D.C. 20472

50-315
3/6

9 SEP 1982

MEMORANDUM FOR: Brian Grimes
Director
Division of Emergency Preparedness
U.S. Nuclear Regulatory Commission

FROM: *Richard W. Krimm*
Richard W. Krimm
Assistant Associate Director
Office of Natural and Technological Hazards

SUBJECT: Evaluation of Offsite Emergency Preparedness Exercises
at the D.C. Cook Nuclear Power Plant

PRINCIPAL STAFF			
RA		DI	
D/RA		ENF	
A/RA		SP	
DP&BP		PAO	
DP&BP		SLO	
DESTP			
ML			
OL		FILE	

Carl P. [Signature]
B. H. A. [Signature]

Attached are copies of the final exercise evaluations prepared by the Federal Emergency Management Agency (FEMA) Region V on the offsite emergency preparedness exercises conducted on March 30, 1982, and October 9, 1980, at the D.C. Cook Nuclear Power Plant. The State of Michigan and Berrien County demonstrated during both exercises an adequate capability and level of preparedness to protect the health, safety, and property of the public in the event of a nuclear accident.

The exercise evaluations contain a detailed discussion of the deficiencies which were noted during the exercises. The State of Michigan was provided copies of both reports and has most recently responded on June 16, 1982 with corrective actions they plan to implement as a result of the deficiencies. This response was not definitive and Region V is continuing to coordinate with Michigan officials to clarify how and when the corrective actions will be implemented. An offsite emergency preparedness exercise is scheduled at D.C. Cook in October 1982.

Attachments
As Stated

SEP 27 1982

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Wingo
Federal Emergency Management Agency

Region V 300 South Wacker, 24th Floor, Chicago, IL 60606 (312) 353-1500

MAY 26 1982

MEMORANDUM FOR: Assistant Associate Director, Office
of Natural and Technological Hazards

FROM: Chairman, Regional Advisory Committee
Region V

SUBJECT: Final Exercise Report - D. C. Cook Nuclear Power Plant

The Final Exercise Report of the D. C. Cook Nuclear Power Plant exercise of March 30, 1982, is submitted herewith.

A copy of this report has been forwarded to the State of Michigan, with a request for them to provide to FEMA Region V their schedule of corrective actions. Upon receipt of their schedule, we will forward a copy to you to keep you informed as to how the corrective actions will be implemented.

Edwin W. Hakala

Attachment

MAY 26 1982

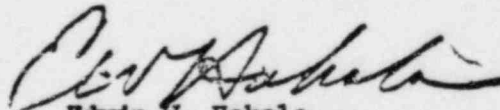
Captain Peter R. Basolo
Deputy Director, Emergency
Services Division
Department of State Police
111 South Capitol Avenue
Lansing, Michigan 48913

Dear Captain Basolo:

Enclosed is a copy of the Final Exercise Report to the D. C. Cook Nuclear Power Plant exercise conducted on March 30, 1982. The report, following a new format prescribed by our FEMA National Office, provides a broad overview of the exercise as well as the detail of the findings of eight (8) Federal observers.

I would appreciate your review of this document and response to it by indicating the corrective actions and the dates you intend to implement them, item by item. Specifically, your response should address Parts IV and V of the report. If you are unable to respond by June 25, 1982, please advise me.

Sincerely,



Edwin W. Hakala
Chairman
Regional Advisory Committee

Enclosure

R5/NT-TH/EWHakala/bb/x6011/5-25-82 EMO-REP-MI EX

cc: RD NT Division (F. Finch)

~~EMO (EMS, Michigan)~~

M. Hepler, Natl ✓

STATE OF MICHIGAN



WILLIAM G. MILLIKEN, GOVERNOR
DEPARTMENT OF STATE POLICE
COL. GERALD L. HOUGH, DIRECTOR

EMERGENCY SERVICES DIVISION
SECOND FLOOR
111 S. CAPITOL AVENUE
LANSING, MICHIGAN 48913

June 16, 1982

File

Mr. Edwin W. Hakala, Chairman
Regional Advisory Committee
Federal Emergency Management Agency
Region V
300 South Wacker, 24th Floor
Chicago, Illinois 60606



Dear Mr. Hakala:

In response to your May 26, 1982, letter and Final Exercise Report to the Donald C. Cook Nuclear Power Plant exercise, the following comments, regarding corrective actions and intended implementation dates, are offered.

Significant Deficiencies

Items

State Response

C.i.a.

Deficiency noted, will be corrected as soon as practicable. The Governors authorized representative in the State EOC is vested with the authority to request federal assistance.

N.i.a.

Deficiency noted, will be corrected during 1983 nuclear power plant exercise scenario development.

Minor Deficiencies

The primary emphasis of the minor deficiencies involve the recommendation for additional on the job training. Training for state level EOC participants is provided for in the nuclear power plant drills and exercises. As such, the state will provide on the job training during the course of up-coming power plant drills and exercises. Other minor deficiencies listed will be corrected as necessary. It must be noted that the Donald C. Cook plant exercise was small scale for the State of Michigan, designed to test communications only.

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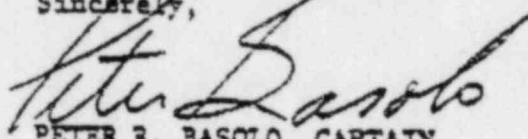
MR. EDWIN W. MAKALIS

June 16, 1982

Page 2

The areas of significant deficiency will be corrected as soon as practicable, during the 1982-83 series of plant exercises. The minor deficiencies will be corrected as necessary. Together, these modifications will help to provide for a well managed and coordinated response.

Sincerely,



PETER R. BASOLO, CAPTAIN
Deputy State Director of
Emergency Services

PRE/JI/pmk

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PART I

FINAL REPORT MAY 11, 1982

ON THE

DONALD C. COOK NUCLEAR POWER PLANT

SMALL SCALE JOINT EMERGENCY EXERCISE

MARCH 30, 1982

EXERCISE PARTICIPANTS

NUMBER OF EVALUATORS

State of Michigan

2 Federal - 2 Contract

Berrien County

6 Federal - 1 Contract

Donald C. Cook Nuclear Power Plant

Unknown - Observed by NRC

Involved States not Participating

None

Involved Localities not Participating

None

Report Prepared By:

Federal Emergency Management Agency, Region V
Natural and Technological Hazards Division
Technological Hazards Branch
Federal Center
Battle Creek, Michigan 49016

PART IIEXECUTIVE SUMMARY

This is the Final Report of the Donald C. Cook Nuclear Power Plant exercise conducted March 30, 1982. The on-site activities were evaluated by staff members from the Nuclear Regulatory Commission, Region III. Specific comments regarding off-site governmental jurisdictions are reflected below. These comments will follow the ten (10) parts of the composite exercit for each off-site governmental jurisdiction.

I. Emergency Operations Facilities and Resources (Working space, internal Communications and Displays, Communication, Security)

State: The State EOC in Lansing is a temporary facility. The EOC was not fully activated since this was a small scale exercise. Participants were basically staff members of the Emergency Services Division. Also because this was a small scale exercise, the State on-scene EOC was not activated. Some displays were used.

Recommend:

- Displays of evacuation routes, sampling points, status board and directions to relocation centers be added.
- Regular briefings given to EOC staff to keep players informed.
- Continue efforts to locate and move to better State EOC facility.

Berrien County: Berrien County's EOC is a new facility. Total floor space is adequate, but additional table space would be helpful. Communications were good utilizing direct phone lines, police radio, and LEIN. The dispatch center is part of the EOC. To improve operations of the EOC, evaluation team recommends:

- Larger classification signs
- Additional displays added: relocation center, evacuation center, shelters, and sampling points. The population map is excellent.
- Additional security in the jail area
- Addition of accoustical tile, carpet, etc. to reduce noise.

II. Alerting and Mobilization of Officials and Staff (staffing, 24-hour capability, alerting timeliness)

State: Staffing was limited due to this being a small scale exercise for the plant. Staffing was from the Emergency Services Division. Many players were filling roles normally not expected of them in that some of the Division's top management people were in flood disaster planning.

- Verification of messages
- Addition of a Health Department (RAD Health) person to the State EOC staff.
- Continue using limited State test to further develop capability for extended operations.

BERRIEN COUNTY: The Berrien County EOC demonstrated the capability of receiving initial notification and continuing operations on a 24-hour a day basis.

Recommend:

- * Actual alerting of all EOC staff take place
- * Dispatch County representatives to the EOF. This was discussed between the County and the utility. It was not effected since the permanent EOF is still under construction.
- * Develop procedures to verify messages.
- * Relocation Centers should be activated per notification procedures instead of preplacement at the start of the exercise, if possible.

III. Emergency Operations Management (Organization, Control, Leadership, Support by Officials, Information flow between Levels and Organizations, Decision-making, Checklists, and Procedures)

State: The EOC staff was organized into executive group, operations group, assessment group, and communications group. Organization, control, leadership, and support by officials was adequate. Specific person in charge of State action needs to be familiar with his authority to request Federal assistance. Some information at the State was not consistent with information of the County. If Health Department representative is not present during limited exercises, Emergency Services Division staff member representing the Health Department needs to be more familiar with PAGs.

Berrien County: The Berrien County emergency operations staff demonstrated a dedicated effort of pre-planning which resulted in an adequate display of emergency operations management. Routine announcements of activities and regular briefings were conducted.

Recommend:

- * Additional training of second shift on operating procedures.
- * Staff meetings prior to implementing protective actions would be helpful.

IV. Public Alerting and Notification (Means of Notification e.g. sirens, Vehicles, or other Systems, Notification Timeliness)

State: Not observed.

Berrien County: Berrien County's outdoor warning system consists of 14 sirens within the 10 mile EPZ. The system was sounded during the exercise and observers in the field actually were able to hear five of the sirens. The system was activated within eight minutes of notification from the State to implement protective actions. Major radio and news media points are alerted by the Berrien County Sheriff's dispatch through the use of one-way receivers. Prepared instructional material issued to the public was good. True capability of the test cannot be determined until a test of the system is conducted according to Guidance Memorandum #18.

V. Public and Media Relations (Publications, Press Facilities, Media Briefings, News Release Coordination)

State: Not observed in detail for the State since this was a small scale exercise. Fifth District Coordinator Emergency Services Division, Michigan State Police did play the role of the Governor's Press Secretary and was part of the JPIC briefings. Recommend this be continued.

Berrien County: JPIC had representatives from the State, the County, and the utility. The Lake Michigan Community College facility has, again, demonstrated it is an adequate facility. Information was coordinated and the media knew this was their source of information. Emergency information brochures were mailed to the public, but it is recommended that emergency information be posted at State and County Parks. It is also recommended the evacuation maps be used at the JPIC.

VI. Accident Assessment (Staff and Field Operations, Monitoring, Adequacy of Equipment, Technical Calculations, Use of PAG's Issuance of Timely Recommendation)

State: Not part of the State's limited exercise in that field assessment teams were not deployed. State EOC staff did issue PAG recommendations to the County based on recommendation and release data given by the utility.

Berrien County: State and local plans show the State is responsible for this. Berrien County radiological teams are equipped with Civil Defense type equipment capable of measuring gross Beta/Gamma radiation. The addition of air (particulate, gaseous and iodine) water and soil monitoring equipment would bring the County resources up to a "full" support team for the State to utilize in obtaining data.

VII. Actions to Protect the Public (Sheltering, evacuation, reception and care, transportation)

State: The State should play a more active role in the RADEF area to eliminate any possibility of communication problems between the State and County. State EOC staff used in this limited exercise of the State EOC appeared to be limited in their knowledge of PAGs.

Berrien County: Berrien County demonstrated it could take appropriate actions to protect the public. However, methods for protecting mobility impaired, dealing with potential impediments to evacuation and evacuation of segments of the population were simulated and, therefore, not demonstrated. State's recommendation to place milk producing animals on stored feed was demonstrated by the County sending the message to seven local radio and news media points and the activation of the outdoor warning system.

Reception/congregate care facility was set up at Watervleit High School. The staffing, facility, and procedures for operation were excellent. Recommend that less simulation be conducted in future exercises in the areas of protecting mobility impaired, and dealing with potential impediments to evacuation.

VIII. Health, Medical, and Exposure Control Measures (access control, adequacy of equipment and supplies, dosimeters, use of KI, decontamination, medical facilities, and treatment)

State: Not observed since this was not part of the exercise for the State.

Berrien County: Health, medical and exposure control measures demonstrated by Berrien County were adequate. Quantities of KI, location, and distribution to emergency workers, and institutionally confined persons are established. Civil Defense dosimeters and film badges were used. Readings of dosimeters should be taken and recorded more frequently than at the end of each shift. Actual recording of readings was also simulated and should be demonstrated in the next exercise. Access control was simulated but appeared adequate. Medical facility was not a part of this exercise.

IX. Recovery and Reentry Operations

State: Not observed as it was not part of exercise at State level.

Berrien County: Recovery and reentry operations demonstrated by Berrien County was excellent. Recovery and reentry operations were systematically conducted in a reverse flow of actions to deactivate shelter, pulling in roadblocks, notifying the public, schools, medical facilities etc. These actions were planned in the EOC but simulated in the field. Good marks were given, but the evaluation team is hesitant to give higher marks due to the amount of simulation.

X. Relevance of the Exercise Experience (benefit to participants, adequacy of the scenario)

The scenario was not available until March 25, 1982 to FEMA and NRC. FEMA Guidance Memorandum stipulates the scenario be provided FEMA and NRC at least 45 days prior to an exercise for our review. Scenario selected basically on-site actions. Closer and earlier coordination between FEMA, State, local, and plant scenario writers needs to take place in the development of future scenarios. The scenario was actually changed the night before the exercise.

Local officials felt the exercise was a benefit even though officials were also concerned with flooding activities. This exercise for the State EOC staff provided an opportunity for second shift staff members to demonstrate their capabilities due to the fact that top management (1st shift) personnel were involved in flood disaster activities for Berrien and Monroe Counties. State and local EOC staff should be complimented due to their determination to continue the flood disaster activities and still provide adequate support to enable Berrien County to conduct this exercise.

PART III.

The following is a detailed discussion utilizing the format of and addressing each element of the Exercrit form as it pertains to the State of Michigan and Berrien County. The items are identified by the section and element identification as they appear in NUREG 0654 FEMA-REP-1, Rev. 1.

STATE OF MICHIGANSummary I - Emergency Operations, Facilities & Resources (Space, Internal Comma., Displays, Security)

The EOC is a temporary facility. It is small and not well equipped; located in various rooms of the Plaza Hotel and difficult to find. The EOC has been operated under these conditions for four years. Although this facility is not very good, it would be supplemented by the on-scene EOC and the Detroit Area EOC. Recording of messages and equipment was adequate. No oral briefings were given nor was a status board used. Three maps were displayed; no evacuation routes, sampling points or relocation centers were shown. This information should be supplied by Department of Health. No security measures were used.

Recommendations: 1) Need clearer directions and identification of the EOC. No street number on the Plaza Hotel or adjacent buildings; 2) Improvement is needed in facilities; display areas, phones, security, space; 3) even in the limited simulation, briefings and showing of evacuations routes, etc. would improve communication, realism and training.

BERRIEN COUNTY

Summary I

Communication systems demonstrated in the Berrien County EOC were adequate. The written plan identified the primary and backup systems to be used by the EOC to communicate with contiguous State/local governments, the utility, and the State's network of EOC's. The main systems consisted of direct phone lines, police radio, and LIEN.

Overall operations of the EOC were adequate. The County has recently finished construction of the facility used as the EOC. Total floor space was more than adequate, however, additional table top area would be helpful. Phone systems for external communication were excellent. A larger emergency classification sign is needed to keep workers informed, in addition to accoustics to reduce noise level. Security measures should be reviewed to prevent unauthorized entry thru the jail.

Maps of evacuation routes, relocation centers, and shelter areas (shown in the plan) should be duplicated for posting in the EOC. A sampling point (radiological) map should be developed and posted as well. The population distribution map was excellent in that it complied with NUREG 0654 requirements.

STATE

F.1.b Adequacy of Communications Systems (Primary and Backup) with Contiguous State/Local Governments within the EPZs

Adequacy has been demonstrated. Telephone, teletype, Civil Defense communication system and radio are available. However, no speaker phone was used. The staff needs more training.

BERRIEN COUNTY

F.1.b. Communication system for contiguous State/local governments were demonstrated as per written plan with a primary and secondary backup. Duplicate primary and secondary systems exist with extended auxiliary generator and feed available.

F.1.c. Adequacy of Communications, as Appropriate, with Federal Emergency Response Organizations

STATE Not observed.

BERRIEN COUNTY Not observed.

F.1.d. Adequacy of Communication System between the Nuclear Facility and Near-Site EOF, and State and for Local EOCs

STATE Communications are good. Personnel needs more training. A verification system of communications should be established.

BERRIEN COUNTY The EOC maintained a direct line plus normal telephone service to the utility. Communications between the County EOC and the State on-scene EOC and the State EOC/Lansing was via phone, police radio and LEIN.

C.1.c. Adequacy of Specific State or Local Resources Needed to Support Federal Response

STATE Not observed.

BERRIEN COUNTY Not observed.

H.3. Adequacy of EOC Working Space and Amenities

STATE Space and amenities are adequate for a limited exercise. In a full scale exercise, more equipment and space plus a more useful arrangement are needed.

BERRIEN COUNTY Working space was adequate, however, additional table space should be provided.

H.3. Adequacy of EOC Internal Communications, Including Equipment, Displays, and Message-Handling Procedures

STATE Message handling was performed in writing and was adequate. No oral announcements were made, perhaps due to the limited exercise scope. Oral communications at regular intervals is recommended. Displays are poor.

BERRIEN COUNTY Internal communications were adequate and message handling procedures were present. However, improvements could be made by installing a large status board and improving accoustics to reduce noise levels.

H.3. Adequacy of EOC Security Measures

STATE No security officer was designated, therefore, there was no security. Players, however, did take some precautions.

BERRIEN COUNTY Tighter security measures should be imposed to prevent unauthorized entry through the jail facility. This can be rectified by instructing jail personnel to direct EOC staff to the front entrance of the EOC.

H.3. Overall Adequacy of the Emergency Operating Center (EOC)

STATE The EOC is located in a hotel, there is no street number or sign present to identify the facility. Overall adequacy was acceptable.

BERRIEN COUNTY The EOC functioned adequately overall.

J.10.a. Adequate Maps Displayed Showing Evacuation Routes, Sampling Points, Relocation Centers, and Shelter Areas

STATE Three maps were displayed. Relocation centers and sampling points were not marked on the displays. Information to correct this is in the plan.

BERRIEN COUNTY Maps of evacuation routes, relocation centers, and shelter areas are in the plan, however, they were not conspicuously displayed in the EOC. Sampling point maps were not found in the plan or the EOC (primarily a State function).

J.10.b. Adequate Map Displayed showing Population Distributions Near Nuclear Facilities by Evacuation Areas

STATE Not observed.

BERRIEN COUNTY An excellent map of population density and distribution was displayed in the EOC.

SUMMARY II - Alerting and Mobilization of Officials and Staff
(Staffing, 24-hour Capability, Alerting Timeliness)

STATE The communication system and its backup functioned adequately. Alerting timeliness was sufficient. No verification for messages was demonstrated.

Recommendation: Improvement is needed in means to check accuracy of messages. A feedback system could be installed.

BERRIEN COUNTY The Berrien County EOC demonstrated the capability of receiving initial notification and continual operations on a 24-hour basis. Procedures and equipment for notifying alerting and activating response organizations and their personnel were adequately demonstrated. A procedure to verify messages should be implemented. Pocket pagers would be helpful in notifying personnel during off-shift.

The actual activation i.e., response without prior knowledge, of the EOC, and dispatch of a County representative to the EOF was not demonstrated for this exercise. Relocation Center should be activated per notification procedure instead of pre-placement of team at the school. These items should be implemented in the next exercise. Adequate capabilities to communicate with fixed and mobile medical support facilities were demonstrated.

A.1.e. Capability for 24-hour Initial Emergency Response and Manning of Communications

STATE Simulation was adequate. EOC personnel needs more training. Twenty-four hour coverage is at the State Police operations center.

BERRIEN COUNTY 24-hour communication links are in existence at the Berrien County Sheriff's office.

A.4 Capability for 24-hour Continuous Emergency Response Operations

STATE Simulation is adequate. Second shift EOC personnel needs more training.

BERRIEN COUNTY All organizations except one department demonstrated a shift change to show continuous 24-hour operation capabilities.

E.1. Adequacy of Procedures used for Notif. of Emergency Response Organizations including means for Verification of Messages

STATE Procedures were described, no means for verification of messages were given.

BERRIEN COUNTY Procedures are in existence and were demonstrated for notifying emergency response organizations, however, procedures for message verification do not exist.

E.2. Adequacy of Procedures used for Alerting, Notifying and Mobilizing Emergency Response Personnel

STATE No demonstration of procedures were observed. Practice is needed.

BERRIEN COUNTY Procedures in the form of call lists are in existence to alert, notify, and mobilize personnel. Call lists could be improved

by listing phone numbers keyed to emergency classifications. Pagers to EOC personnel would also improve alerting procedures.

C.2.a. Appropriate, Timely Dispatch of a Representative to Licensees Near-Site EOF

STATE Not observed.

BERRIEN COUNTY County Commissioner was assigned to respond, however, not dispatched due to EOF not being established. The utility is using TSC until EOF is built. Recommend County dispatch representative to the EOC.

F.1.a. Adequacy of Emergency Response Communications Equipment Used with Prompt Activation

STATE Good equipment is available, however, practice is needed in accomplishing prompt activation.

BERRIEN COUNTY Communication equipment that existed included telephone, police radio, and lien.

F.1.e. Adequacy of Communications Equipment used for Alerting and Activating Emergency Response Personnel

STATE Good equipment is available, practice is needed.

BERRIEN COUNTY Telephone used to direct dial personnel per established list. Pocket pagers could be added for backup.

F.2. Capability to Communicate with Fixed and Mobile Medical Support Facilities

STATE Not observed.

BERRIEN COUNTY The capability exists to communicate between Berrien County and 75% of existing ambulance services. All fire/rescue groups have two-way radios. Primary and secondary systems exist between EOC and hospitals.

H.4 Demonstration of Timely and Efficient Activation and Staffing of EOCs and other Facilities

STATE All organizations were represented at the EOC with most being staffed by backup personnel.

BERRIEN COUNTY Not demonstrated.

SUMMARY III - Emergency Operations Management (Organization, Control, Leadership, Support by Official, Decision Making)

STATE Organization, control, and leadership was demonstrated adequately. Support by officials was good. No specific person was assigned for requesting federal assistance. Little status reporting was done orally. Recommend: 1) A specific person should be identified with authority to request Federal assistance; 2) briefings should be more frequently scheduled; 3) more training of Health Department PAG actions needs to take place if a Health Dept. representative is not part of the State EOC staff during limited exercises. Example is the State recommendation to shelter up to two miles within sector G & H,

NUREG 0654/FEMA REP-1, Revision 1, recommends sheltering up to two miles in all sectors or a precautionary measure during situations depicted in this scenario. Dose assessment not clear.

BERRIEN COUNTY The Berrien County EOC demonstrated a dedicated effort of preplanning which resulted in an adequate display of emergency operations management. A specific individual, as the County Board Chairman, and his Vice Chairman was in charge of the operations. The Vice Chairman at times lacked complete knowledge of operating procedures. Primary and support functions were assigned and demonstrated in the EOC. Support by local elected officials was evidenced by active participation by three elected persons.

The emergency response director and his replacement conducted routine announcements of activities and held regular briefings. Staff meetings prior to implementation of protective actions would be helpful.

A.1.a. Evidence the Specific Organizations have been Adequately Established as Part of Overall Response

STATE Not observed.

BERRIEN COUNTY This element was demonstrated.

A.1.d. Demonstration that a Specific Individual, by Title, was Effectively in Charge of Emergency Response

STATE More experience was needed at overseeing the State emergency operations by the individual in charge.

BERRIEN COUNTY Berrien County Board Chairman was in charge of emergency response. After shift change, vice-chairman replaced the chairman and was not completely aware of procedures.

A.2.a. Demonstration that Primary and Support Functions and Responsibilities have been Assigned to Specific Organizational Elements

STATE This has been demonstrated on paper, however, additional practice in action is needed.

BERRIEN COUNTY The plan described functional responsibility assignments. EOC groups demonstrated that assigned responsibilities were being carried out.

C.1.a. Evidence that a Specific Person has been Authorized to Request Federal Assistance (State Only)

STATE No specific person has been named.

BERRIEN COUNTY Not a County function.

D.3. An Emergency Classification System was Effectively used and was Consistent with that of the Utility

STATE This element was demonstrated.

BERRIEN COUNTY The classification system used by the County and the utility was consistent.

D.4. Adequate Written Procedures are used for Emergency Actions Consistent with Facility RECC and Local Off-site Conditions

STATE Not observed.

BERRIEN COUNTY Emergency Action written procedures are consistent with facility recommendation and local offsite conditions.

D.4. Demonstration of Effective Coordination Between Emergency Response Director and Staff, thru Oral Briefings, Staff Meetings, Etc.

STATE The above element was demonstrated, however, there were no oral briefings utilized.

BERRIEN COUNTY Emergency Response Director and his replacement conducted routine announcements of activities and held regular briefings.

D.4. Adequacy of Support and/or Participation by Elected Officials

STATE Mr. Payne from the Governor's office was on hand during the exercise.

BERRIEN COUNTY The County Board Chairman, his vice-chairman and the County Sheriff were present in the EOC and participated in active roles during the exercise.

SUMMARY IV - Public Alerting and Notification

STATE The State was not active in this element and was therefore unobservable.

BERRIEN COUNTY This County has its own EBS network. Means of contact would be by a one-way receiver between the Berrien County Sheriff's dispatch and the EBS. The siren system, consisting of 14 sirens, covering the 10 mile EPZ. It was confirmed by observers that at least five sirens were operational. The County was able to activate this system within 8 minutes of notification from the State to implement protective actions. State's action to notify the County was somewhat delayed.

Pre-prepared instructional material issued by the utility for mass distribution exceeded the criteria of NUREG 0654 element E.7.

True capability of the public alert and notification system cannot be determined until FEMA conducts a test of the system as outlined in Guidance Memorandum #18.

E.5. Evidence of a Reliable System for Dissemination to the Public of Appropriate Information Received from the Licensee, e.g. EBS

STATE Not observed.

BERRIEN COUNTY EBS is available in Berrien County. The means of contact would be by a one-way receiver between Berrien County Sheriff's dispatcher and the EBS.

E.6. Adequacy of Means Used for Notification and Prompt Instruction to the Public in the Plume EPZ (within 15 minutes)

STATE Not observed.

BERRIEN COUNTY The siren system consisted of 14 sirens covering the entire 10 mile EPZ. It was confirmed that at least five sirens were observed to be operational by Federal observers. The County activation of this system took 8 minutes. The State took an extra amount of time in notifying the County (18 minutes). FEMA evaluation still needs to be completed.

E.7. Effective Use of Instructional Messages for the Public in Affected Areas.

STATE Not observed.

BERRIEN COUNTY Pre-prepared instructional material was issued by the utility for mass distribution.

J.10.c. Adequacy of Means used for Notifying All Segments of the Transient and Resident Population

STATE Not observed.

BERRIEN COUNTY Not observed.

SUMMARY V - Public and Media Relations

STATE All elements dealing with public and media relations were handled at the JPIC. No observations were made at the State level.

BERRIEN COUNTY The JPIC is an adequate facility including phone lines, typewriters, and work space for the media. The State and utility also have adequate work space. All equipment is kept on-site. The JPIC can be operational within two hours. Recommend that the area designated for the Federal agencies be as close as possible if not adjacent to the State and utility work space.

Briefings were thorough and were held on a timely basis. Good explanations were given as to the protective action guides to be taken. Recommend that a map indicating possible evacuation routes be located in the JPIC. The charts and maps should be used as much as possible to illustrate points made during the briefing.

It was clear that the State, County and utility coordinated all information and worked closely together. Constant communication was maintained between the State and County EOCs and the JPIC. Good press kits were available. The media was also briefed prior to the exercise. It was clear that the media understood that the JPIC was their source of information. Brochures containing emergency information were mailed to all of Berrien County. Information was also hand delivered to all public facilities in the EPZ. Recommend that some follow-up be done to insure that this information is used. Emergency information should also be posted in the State and County parks.

G.1. Evidence of Dissemination of Information to the Public within the Last Year

STATE Not observed.

BERRIEN COUNTY A brochure was mailed to all of Berrien County last Summer 1981. Plans are underway to do another mailing within the next six months. In addition, as new residents move into the community the information is mailed to them.

G.2. Evidence of a Public Info. Program for Permanent and Transient Population in the Plume EPZ, such as Posted Notices Etc.

STATE Not observed.

BERRIEN COUNTY Information pamphlets were hand delivered to all public facilities in the EPZ. Brochures were also delivered to all hotel/motels within the EPZ. Recommend that some follow-up be done to try to insure that this information is being used.

G.3.a. Appropriate Points of Contact for the Media have been Designated

STATE The State EOC was in continuous contact with the JPIC. The EOC communications staff needs some additional training.

BERRIEN COUNTY The media was briefed periodically during the exercise. It was clear that the media knew that the JPIC was the source of their information.

G.3.a Adequacy of the Joint Media Facility, Where Appropriate

STATE Not observed.

BERRIEN COUNTY The media had adequate facilities including phone lines, typewriters and work space. The State and utility also had ample working space. Space could also be provided for any additional Federal agencies as needed. The JPIC was operational in two hours.

G.3.a Adequacy of Issued Press Releases

STATE Not observed.

BERRIEN COUNTY Press briefings were held on a timely basis. Hard copies were provided immediately following the briefings. Briefings were thorough, containing necessary information while attempting to summarize the preceding events.

G.4.a A Media Spokesperson has been Designated who has Access to all Necessary Information

STATE Not observed.

BERRIEN COUNTY The State and County had spokespersons present who were in constant contact with their respective EOCs. It was understood that the State would have backup personnel on-scene at all times. The State, County, and utility were in constant communication.

G.4.b Adequacy of Arrangements for Exchange of Information Among Spokespersons

STATE Not observed.

BERRIEN COUNTY The State and utility were located in the same work area and coordinated all information before each briefings. Information was exchanged and thoroughly discussed.

G.4.c. Adequacy of Coordinated Arrangements for Rumor Control Measures

STATE Not observed.

BERRIEN COUNTY Not observed.

SUMMARY VI - Accident Assessment (Staff and Field Operations, Monitoring, Equip. Technical Calculations, Use of PAGs)

STATE The State field assessment teams were not deployed during this exercise since they were tested during FERMI II and this was considered a small scale exercise for the State. State EOC staff did recommend PAGs to the County.

BERRIEN COUNTY Berrien County radiological monitoring teams are equipped with Civil Defense type equipment capable of measuring beta/gamma radiation. As described in the written plan, the State is responsible for accident assessment with the County providing initial data and acting in a support role after arrival of State resources. The County has established the RADEF contact in the EOC as the central point for receipt of data. This data is transmitted to the State EOC for analysis.

The addition of air (particulate, gaseous, and iodine), water and soil monitoring equipment would bring the County resource up to a "full" support team for the State to utilize in obtaining data.

H.7. Adequacy of Off-site Radiological Monitoring Instruments

STATE Not observed.

BERRIEN COUNTY Instrumentation is of the Civil Defense variety for evaluation beta/gamma radiation. Capabilities are limited due to the heavy reliance placed on receiving support from the State Health Department.

H.12. An Adequate Central Point has been Established for Receipt and Analysis of Field Monitoring Data and Sample Media

STATE Not observed.

BERRIEN COUNTY Field teams report directly to RADEF positions in the EOC via radio (primary) and telephone (backup). This information is then transferred via direct line to the State EOC.

I.7. Adequacy of Capability and Resources for Field Monitoring within the Plume EPZ

STATE Not observed.

BERRIEN COUNTY County teams have the capability to measure only gamma exposure rate. State teams make up for absence in monitoring capabilities for particulate and gaseous releases.

I.8. Adequate Capability to Make Rapid Assessment of Magnitude and Location of Liquid or Gaseous Radiological Hazards

STATE Not observed.

BERRIEN COUNTY Responsibility to measure liquid and gaseous releases is assigned to the State monitoring teams. These capabilities could arrive at the scene within 2 - 3 hours.

I.9. Capability for Measurement of Radioiodine Concentrations in Plume EPZ under Field conditions to 10F - 1 (State Only)

STATE Not observed.

BERRIEN COUNTY Not observed.

I.10. Capability for Relating Measured Parameter to Dose Rates and Estimated Integrated Doses (State Only)

STATE Not observed.

BERRIEN COUNTY Not observed.

I.11. Capability for Locating and Tracking Airborne Radioactive Plume with Aid of Federal and/or State Resources (State Only)

STATE Not observed.

BERRIEN COUNTY Not observed.

J.10.m. Capability to Recommend, Protective Action, Based on PAGs, in Plume EPZ (State Only)

STATE Not observed.

BERRIEN COUNTY Not observed.

C.3. Evidence of Availability and Capability of Radiological Laboratories (State Only)

STATE Not observed.

BERRIEN COUNTY Not observed.

SUMMARY VII - Action to Protect the Public

STATE Direction from the State on sheltering was demonstrated, evacuation, reception and care, transportation were not demonstrated. Milk cows were put on stored feed. Evacuation was not called for in the scenario. No releases were stated.

State should play a more active role in the RADEF area to eliminate any possibility of communication problems between the State and the County. Utility transmitted release data and recommendations (PAGs) to the State. It appeared from the viewpoint of the evaluation team that little analysis was conducted by the State. This is probably due to the fact Emergency Services Division personnel used during this limited exercise were limited in their knowledge in this area.

BERRIEN COUNTY The County demonstrated they could take appropriate actions to protect the public. However, methods for protecting mobility impaired, dealing with potential impediments to evacuation, and evacuation of population were simulated and, therefore, not demonstrated.

The State's recommendation to implement in-place sheltering and placing milk producing animals on stored feed was demonstrated by the County sending of a message to seven local media stations and the activation of the warning sirens eight minutes after receiving the State's recommendation.

All relocation centers have been established in excess of 10 miles outside the plume EPZ. Facilities, staffing, and procedures for the operation of mass care centers was excellent. For the purpose of the exercise, supplies and equipment were kept to a minimum, however, advance planning for long term care was evident.

J.2. Coordination with Utility for Movement of Onsite Individual to Offsite Location

STATE Not observed.

BERRIEN COUNTY Not observed.

J.9. Capability for Implementation of Protective Measures

STATE Not observed.

BERRIEN COUNTY Protective measures were implemented by broadcasting the State's recommendations to pertinent radio/TV stations. Elements of the message included: In-place sheltering and milk producing animals placed on stored feed. The County received this message from the State by 11:07 and had sent the message to seven media stations by 11:16. The message issued by the State did not include any information about a release. Berrien County was forced to blindly follow the State's recommendation without any supporting evidence.

J.10.d. Adequacy of Methods used for Protecting Mobility Impaired Persons, Including Institutionally Confined

STATE Not observed.

BERRIEN COUNTY Lists of mobility impaired persons appear in the plan. However, no method of protection was demonstrated in the exercise.

J.10.g. Adequacy of Methods used for Implementing Relocation of Populace

STATE Not observed.

BERRIEN COUNTY Plans were in place. School support representative made phone calls to check availability of driver and buses. Dispatch of buses and drivers to schools, nursing homes etc. was simulated. Movement of personnel was also simulated. This area should be tested.

J.10.k. Adequacy of Organization, Identification of and Means for Dealing with Potential Impediments to Evacuation

STATE Not observed.

BERRIEN COUNTY Plans were in place for dealing with impediments to evacuation, however, the exercise scenario did not deal with this aspect.

J.11. Adequacy of Protective Measures in Ingestion EPZ, Including Dairy Facilities, Food Processing Plants, etc. (State Only)

STATE Not observed.

BERRIEN COUNTY All relocation centers were in excess of 10 miles outside the plume EPZ.

J.10.h. Adequacy of Facilities, Supplies, and Equipment at Relocation and/or Mass Care Centers

STATE Not observed.

BERRIEN COUNTY Facilities for mass care and relocation center was excellent, however, for the purpose of the exercise, the supplies and equipment were kept to a minimum.

J.10.H. Adequacy of Staffing at Relocation and/or Mass Care Center

STATE Not observed.

BERRIEN COUNTY Staffing at the relocation center was adequate. They demonstrated shift changes and planning for any possible long term care.

J.12. Adequacy of Procedures for Receiving Evacuees in Relocation Centers Including Health Care, Decon., and Rad Monitoring, etc.

STATE Not observed.

BERRIEN COUNTY Procedures for processing evacuees in relocation centers, including health care, decontamination and monitoring was excellent.

SUMMARY VIII - Health, Medical, and Exposure Control Measures

STATE This is a County function and was not observable at the State level.

BERRIEN COUNTY Health, Medical, and exposure control measures demonstrated by Berrien County were adequate. County Health Department officials have established quantities, locations, and means of distributing KI to emergency workers and institutionalized persons. The control of access to evacuated areas was simulated for this exercise. The County maintains direct reading and film type dosimeters for use by emergency workers. Distribution of the equipment or mock pieces should be demonstrated. Readings from the dosimeters should be made at more frequent

periods than at the end of each shift. The actual recording of readings was also simulated and should be demonstrated in the next exercise. The decision chain to authorize emergency workers to exceed PAGs starts at the individual department head, proceeds to the County Health Dept., and stops at the State Health Department for ultimate decision.

J.10.e. Adequacy of Provisions for Use of KI for Emergency Workers and Institutionalized Persons in Plume EPZ

STATE Not observed.

BERRIEN COUNTY County Health officials have established quantities, locations, and means of distributing KI to emergency workers and institutionalized persons. The actual distribution should be exercised.

J.10.f Adequacy of Methods used by State Health Department in Decisions to Administer KI to Central Population (State Only)

STATE Description of KI is adequate. Supplies and their location were available. The actual presence of KI was not demonstrated.

BERRIEN COUNTY Not observed.

J.10.j. Adequacy of Control of Access to Evacuated Areas

STATE Not observed.

BERRIEN COUNTY Not observed.

K.3.a. Adequacy of a 24-hour a Day Capability to Determine Dose Received by Emergency Workers

STATE Not observed.

BERRIEN COUNTY The assignment of whole body and film dosimeters to emergency workers was simulated. However, the equipment required for this exercise was available at the EOC.

K.3.b. Demonstration of Adequate and Frequent Emergency Worker Dosimeter Readings and Maintenance of Dosage Records

STATE Not observed.

BERRIEN COUNTY Worker dosimeter readings were made only at the end of the shift change. Suggest more frequent readings by emergency personnel. The actual record management was simulated, therefore, these capabilities were not actually demonstrated.

K.4. Evidence that an Adequate Decision Chain has been Established to Authorize Exposure for Emergency Workers in Excess of PAGs.

STATE Not observed.

BERRIEN COUNTY The decision chain has been established in the written plan. Each organization reports exposure to County RADEF, who reports to State Health Department for ultimate decision.

K.5.a. Evidence that Appropriate Action Levels have been Specified for Determining Need for Decontamination

STATE Not observed.

BERRIEN COUNTY Guidelines have been established by the written plan. Observation of relocation center operations verified that guidelines were being used.

K.5.b. Adequacy of Measures for Decontamination of Emergency Personnel, Supplies, and Equipment, and for Waste Disposal

STATE Not observed.

BERRIEN COUNTY Not observed.

L.1. Adequate Capability Demonstrated by Local and/or Backup Hospital and Medical Services for Handling Personnel

STATE Not observed.

BERRIEN COUNTY Not observed.

L.4. Adequate Capability Demonstrated for Transportation of Radiological Accident Victims to Medical Support Facilities

STATE Not observed.

BERRIEN COUNTY Not observed.

M.4. Capability for Periodic Estimation of Total Population Exposure (State Only)

STATE Not observed.

BERRIEN COUNTY Not observed.

SUMMARY IX - Recovery and Reentry Operations

STATE This function was not observed at the State level.

BERRIEN COUNTY Recovery and reentry operations demonstrated by Berrien County were excellent. Procedures were demonstrated showing the County's capability to reverse previous actions. Examples include: deactivation of shelters, pulling in of roadblocks, notifying schools, medical facilities and others responsible for emergency response actions. It appears actions were demonstrated to the observers through simulation, however, future exercises should demonstrate this capability.

M.3. Adequacy of Established Means for Informing Response Organizations that Recovery and Reentry can be Initiated (State Only)

STATE Not observed.

BERRIEN COUNTY Not observed.

M.1. Adequacy of Procedures Demonstrated for Reentry and Relaxation of Protective Measures Allowing Reentry

STATE Not observed.

BERRIEN COUNTY Procedures were demonstrated showing the County's capability in reversing actions. For example: deactivation of shelters, pulling in roadblocks, notifying schools, medical facilities, etc. It appears that actions were demonstrated to the observers through simulation, however, further exercises should demonstrate this capability.

SUMMARY X - Relevance of the Exercise Experience

STATE Little benefit in the way of training was gained in this exercise. Participants displayed lack of enthusiasm. Two copies of the scenario were openly displayed at beginning of exercise; it was unclear to participants and observers whether this was intended. The scenario was adequate only in terms of the small scale exercise. A limited exercise may not be of benefit at the State level.

Recommendation: 1) The goals for this type of exercise should be clearly defined for each governmental level. The manner in which the exercise is conducted should be consistent with its purpose. 2) Prior knowledge of the scenario by the participants is not permitted.

BERRIEN COUNTY In spite of the weak scenario, most of the organization present in the EOC participated to the extent of their fullest capabilities. Deficiencies were as follows: 1) Only 3 of the 4 emergency classifications were delineated in the scenario; 2) involvement of off-site groups were not discussed; 3) only sheltering was exercised, there were no provisions to evacuate; 4) there were too many activities simulated.

The exercise tested the response capabilities of most of the organizations represented in the EOC. Personnel in the executive group felt they were not utilizing total talents. Most participants found the exercise to be helpful in preparing them for radiological/reactor incidents. Because of the recent work with emergency flood response, many agencies were demonstrating duplicated capabilities and considered the exercise redundant. Future exercises should include more involvement of the State, County, and utility in developing the scenario to alleviate the above four weaknesses.

N.1.b. Adequacy of Scenario to Test Capability to Mobilize State and Local Resources

STATE This element was acceptable only in terms of a small scale exercise. Some confusion existed in the General Emergency status.

BERRIEN COUNTY The overall scenario was weak. Most of the organizations present in the EOC participated, but not to the extent of their fullest capabilities. Deficiencies were as follows: Only three of the four emergency

classifications were delineated in the plan; involvement of off-site groups was not discussed; only sheltering was exercised, there were no provisions to evacuate; and there were too many activities simulated.

N.1.a. Adequacy of Exercise to Test Integrated Capabilities and Major Portions of the Basic Existing Response Elements in Affected Organ.

STATE There was not very much activity at the EOC. The capabilities were not fully tested. This was due to the fact that this was a small scale exercise.

BERRIEN COUNTY The exercise tested the response capabilities of most of the organizations represented in the EOC. Personnel in the executive group felt they were not being utilized for their total talents.

N.1.a. Benefit of Exercise to Participants

STATE The benefit of this exercise to participants was questionable. Most Emergency personnel were just playing the part of answering the telephone and writing messages. There was little enthusiasm shown by the players. This was the third exercise in two months.

BERRIEN COUNTY Most of the participants found the exercise to be helpful in preparing them for radiological/reactor incidents. Because of the recent work with emergency flood response, many agencies were demonstrating duplicated capabilities and considered the exercise a waste of time.

PART IVSIGNIFICANT DEFICIENCIES

Significant Deficiencies which should be corrected relate to:

STATE

- C.1.a. There was no person specified, by title having the authority to request Federal assistance.
- N.1.a. Scenario not prepared until March 25, 1982. Utility, State, and local scenario planners need to be involved in development of scenario.

BERRIEN COUNTY

- E.6. Although at no fault of the exercise, the procedures for Notification and Prompt Instruction to the Public in the plume exposure pathway is listed in the significant discrepancy section of the Final Report. This element must be evaluated by FEMA in accordance with existing guidance and directives at a later date.
- N.1.b. The scenario was weak. Local scenario writers need to be involved in the development of the exercise scenario according to Guidance Memorandum #17. Less simulation should be built into the scenario.

PART VMINOR DEFICIENCIES

While not necessarily significant deficiencies, it is recommended that these minor deficiencies be corrected:

PLAN DEFICIENCIES

STATE Not applicable.

BERRIEN COUNTY

- E.1. The evaluation team found that there were no procedures established for the verification of messages at the EOC. Recommend revisions to the plan to include a method of message verification.
- E.2. This element was demonstrated well. Recommend improvements to the call down list used for notification and alerting be made by the addition of the phone number of emergency personnel keyed to emergency classifications.
- G.2. Improved methods are needed to notify the transient and recreational population in the 10 mile plume EPZ.

TRAINING DEFICIENCIESSTATE

- A.1.e. This element was demonstrated sufficiently. Additional on-the-job training would be beneficial to the 24-hour initial emergency response.
- A.1.d. This function was demonstrated well. On-the-job training is recommended for backup personnel.
- A.2.a. Evidence that primary and support functions, and responsibilities have been adequately assigned to specific organizations was observed by the evaluation team. Recommend additional on-the-job training.
- A.4. This function was demonstrated well. Recommend additional on-the-job training.
- E.1. There were no procedures for the verification of messages received.
- E.2. Although procedures are established, there was no evidence of their use observed. Recommend on-the-job training to assure adequate notification and alerting of emergency response personnel.
- F.1.a. This function was demonstrated. Additional on-the-job training is recommended.
- F.1.b. This function was demonstrated. Additional on-the-job training is recommended.
- F.1.d. This function was demonstrated. Additional on-the-job training is recommended.
- F.1.e. This function was demonstrated. Additional on-the-job training is recommended.

- G.3.a. This function was demonstrated. Additional on-the-job training is recommended.
- H.4. For this exercise, backup personnel were used exclusively. Although they performed well, additional training is recommended.
- J.10.f. Demonstration of the methods used by the State in making decisions about the use of KI were adequate. Additional on-the-job training is recommended.
- N.1.b It was evident that additional on-the-job training is needed to assure the adequate mobilization of State and local personnel and resources.

BERRIEN COUNTY

- A.1.d. This was demonstrated well. Additional training of the second shift personnel would be helpful.
- J.9. This function was demonstrated well. Recommend continued on-the-job training.
- J.10.e This function was demonstrated well. Recommend continued on-the-job training.
- J.10.g. This function was demonstrated well. Recommend continued on-the-job training.
- K.3.a. This element was simulated. Additional on-the-job training is recommended.
- K.3.b. Additional formal and on-the-job training is needed to achieve an efficient system.
- K.4. This function was demonstrated well. Recommend additional training on the use of PAGs.
- K.5.a. This function was demonstrated well. On-the-job training should be continued to maintain this efficiency.

RESOURCE DEFICIENCIES

STATE

- H.3. The State EOC needs more work space, a larger facility would improve operating efficiency. A person should be designated as a security officer to regulate access into the EOC. Additional identification of the EOC facility from the street is needed.
- J.10.a. There were no maps displayed showing sampling points, relocation centers or evacuation routes.

BERRIEN COUNTY

- A.1.a. Additional staffing is needed from the damage assessment group.
- A.4. This function was demonstrated well. All involved agencies excluding one agency executed a shift change during the exercise.

- F.1.d. This element was adequately demonstrated, however, a tertiary backup to the dual phone system (commercial and dedicated lines) with the utility could prove useful if there was a telephone black out.
- F.1.e. This function was demonstrated well. The addition of a backup paging system would be helpful.
- F.2. This function was demonstrated well. Recommend that additional communication equipment be utilized to include all ambulance services.
- H.3. Tighter security measures should be used to prevent unauthorized entry through the jail facility. It is further recommended that measures be taken to reduce the noise level within the EOC working area.
- H.7. Field monitoring teams need additional equipment which would allow them to take comprehensive air, water, and soil samples.
- H.12. Field teams are able to report directly to the RADEF personnel at the EOC via primary and/or secondary systems. This data is then transferred on to the State EOC via direct phone lines. The addition of a backup system would be helpful.
- I.7. Additional equipment is needed for the monitoring teams dispatched into the plume EPZ.
- I.8. Additional equipment is required such that monitoring teams have the ability to take liquid or gas (air) samples.
- J.10.a. Maps of evacuation routes, relocation centers, and shelter areas are shown in the plan but they were not conspicuously displayed in the EOC.
- M. . . Although this function was simulated, it was demonstrated sufficiently. Recommend that in future exercises, this element is physically tested.

PART VI SCHEDULING FOR CORRECTION OF SIGNIFICANT DEFICIENCIES

A schedule for the correction of the significant deficiencies listed by State and local jurisdictions to be provided to the Chairman, Regional Advisory Committee, Federal Emergency Management Agency, Region V by June 25, 1982.

FEDERAL EMERGENCY MANAGEMENT AGENCY
Region V
Federal Center
Battle Creek, MI 49016

FEB 9 1981

MEMORANDUM FOR: John E. Dickey, Director
Radiological Emergency Preparedness Division

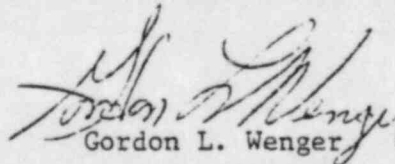
FROM: Executive Secretary, Regional Advisory Committee

SUBJECT: Post-Exercise Evaluations

Attached you will find the Post-Exercise Evaluations for seven of the nine State and local Radiological Emergency Plan exercises which have been conducted in FEMA Region V.

1. State of Michigan and Berrien County Exercise of the Peacetime Radiological Emergency Response Plan for the Donald C. Cook Nuclear Power Plant, near Bridgman, Michigan, conducted October 9, 1980.
2. State of Minnesota and Goodhue County Exercise of the Radiological Emergency Response Plan for the Prairie Island Nuclear Power Plant, Red Wing, Minnesota, conducted October 14, 1980.
3. State of Wisconsin and Pierce County Exercise of the Peacetime Radiological Emergency Response Plan for the Prairie Island Nuclear Power Plant, Red Wing, Minnesota, conducted October 14, 1980.
4. State of Illinois and Grundy, Kendall and Will Counties' Exercise of the Illinois Plan for Radiological Accidents for the Dresden Nuclear Power Plant, Morris, Illinois, conducted October 28, 1980.
5. State of Ohio, Ottawa County and Toledo-Edison Company Exercises of the Peacetime Radiological Emergency Response Plan for the Davis-Besse Nuclear Power Plant, Port Clinton, Ohio, conducted November 6, 1980.
6. State of Illinois and Grundy and LaSalle Counties' Exercise of the Illinois Plan for Radiological Accidents for the LaSalle Nuclear Power Plant, Ottawa, Illinois, conducted December 4, 1980.
7. State of Michigan and Van Buren, Allegan and Berrien Counties' Exercise of the Radiological Emergency Response Plans for the Palisades Nuclear Power Plant near South Haven, Michigan, conducted December 9, 1980.

RAC evaluations for the Monticello, Minnesota, and Kewaunee-Manitowoc Counties, Wisconsin, are being prepared and will be forwarded to you upon completion.


Gordon L. Wenger

Attachments

REP
2-18

1

POST-EXERCISE EVALUATION

STATE OF MICHIGAN AND BERRIEN COUNTY EXERCISE
OF THE PEACETIME RADIOLOGICAL EMERGENCY RESPONSE PLAN

FOR

DONALD C. COOK NUCLEAR POWER PLANT, BRIDGMAN, MICHIGAN

OCTOBER 9, 1980

PREPARED BY:
FEDERAL EMERGENCY MANAGEMENT AGENCY
PLANS AND PREPAREDNESS DIVISION, REGION V
FEDERAL CENTER
BATTLE CREEK, MICHIGAN 49016

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I. INTRODUCTION

On December 7, 1979, the President directed the Federal Emergency Management Agency (FEMA) to assume lead responsibility for all off-site nuclear planning and response.

1. FEMA's immediate basic responsibilities in Fixed Nuclear Facility - Radiological Emergency Planning include:
 - a. Taking the lead in off-site emergency planning and review and evaluation of State and local government emergency plans for adequacy.
 - b. Determining whether the plans can be implemented, based upon observation and evaluation of exercises conducted in these jurisdictions.
 - c. Coordinating the activities of all of the involved Federal and Volunteer Agencies:
 - (1) Federal Emergency Management Agency (FEMA)
 - (2) Nuclear Regulatory Commission (NRC)
 - (3) Environmental Protection Agency (EPA)
 - (4) Department of Energy (DOE)
 - (5) Department of Health and Human Services (HHS)
 - (6) Department of Transportation (DOT)
 - (7) Department of Agriculture (USDA)

Representatives of these agencies serve as members of the Regional Advisory Committee (RAC) which is chaired by FEMA.

Formal submission of emergency plans to the RAC by the States and involved local jurisdictions, is, in each case, followed closely by the exercising, critiquing and evaluation of those plans. A follow-up public meeting is held to acquaint the citizenry with contents of the plans, answer questions about them and receive suggestions on the plans.

2. A radiological emergency exercise was conducted October 9, 1980, between the hours of 8:00 a.m. and 12:30 p.m. by the State of Michigan and Berrien County, Michigan, to assess the adequacy of the Michigan Emergency Preparedness Plan and preparations to protect the public in the event of a radiological emergency involving the Donald C. Cook Nuclear Power Plant, operated by-Indiana-Michigan Electric Company near Bridgman, Michigan.

3. A critique of the October 9 exercise was held October 10, 1980, at the Berrien County Building, St. Joseph, Michigan.
4. A public meeting was conducted at 7:00 p.m., December 15, 1980, at the Berrien County Building, St. Joseph, Michigan.
5. General RAC objectives for the operational phase of the plans were to exercise and evaluate the following elements as described in the All-State Letter to State Emergency Services Directors in Region V, August 28, 1980:

Communications and Warning
Accident Assessment
Capability of Field Assessment Teams
Use of Protective Action Guides (PAG's)
Public Information
Evacuation Methodology that would be used
Provisions for Re-entry and Recovery of the
Affected Area
Direction and Control.

Comments on those general areas follow. The basic planning document on which the State and local plans were developed was NUREG 0654-FEMA REP-1.

6. Participating organizations included:
 - a. Michigan State Police - MSP (Division of Emergency Services) - the lead agency, primarily operating from the MSP Near-Scene EOC at New Buffalo, Berrien County.
 - b. Radiological Health Division (State Department of Public Health).
 - c. State agencies in support roles - Agriculture, Transportation, Social Services, Military Affairs, etc.
 - d. Berrien County (St. Joseph).
 - e. Cook Nuclear Power Plant.
 - f. Joint Public Information Center - JPIC (Lake Michigan College, Benton Harbor).

7. Federal observers were:

<u>OBSERVER</u>	<u>AGENCY</u>	<u>SITE</u>	<u>FUNCTION</u>
1. P. McCollough	FEMA	Overview	RAC Chairman
2. G. Wenger	FEMA	Overview	RAC Exec. Secy.
3. G. Barber	Center for Planning & Research	Overview	State EOC
4. J. Devlin	"	Overview	County EOC
5. D. Leibel	"	Overview	Joint Public Info. Ctr.
6. B. Newhard	FEMA	On-Scene	State EOC
7. S. Swanson	FEMA	Comm. Van	Communications
8. J. Pagliaro	NRC	On-Scene	State EOC
9. T. Combs	DOE	On-Scene	State EOC
10. P. Tedeschi	EPA	On-Scene	State EOC
11. J. Pagliaro	NRC	On-Scene	State EOC
12. R. Kellogg	FEMA	On-Scene	State EOC
13. D. Bement	FEMA	On-Scene	State EOC
14. R. Hatcher	FHA	On-Scene	State EOC
15. P. Frost	FEMA	Berrien Co.	EOC Communications
16. D. King	FEMA	Berrien Co.	EOC Accident Assessment
17. R. Lee	FEMA	Berrien Co.	EOC Public Information
18. G. Rapp	FEMA	Berrien Co.	EOC Evacuation
19. W. Curtis	FEMA	Berrien Co.	EOC Host Reception Ctr.
20. D. Meyer	FEMA	Berrien Co.	EOC Re-entry/Recovery
21. E. Robinson	FEMA	Berrien Co.	EOC Direction & Control
22. R. Shapiro	FEMA	Berrien Co.	EOC Direction & Control
23. R. Schwartz	FEMA	Berrien Co.	EOC Transportation
24. M. Ouellette	FEMA		Secretary
25. B. Bailey	FEMA		Secretary

8. Major functions witnessed by Federal observers were evaluated in accordance with the following criteria:

Capability outstanding; excellent demonstration.

Capability good; exceeds minimum standards - some improvements recommended.

Capability acceptable; meets minimum standards - significant improvements needed.

Capability weak; does not meet minimum standards - significant improvements needed.

Capability not demonstrated or lacking.

9. State and local jurisdictions are required to take remedial actions responsive, on a point-by-point basis, to the formal recommendations of the RAC. One month from receipt of this document State and local jurisdictions should submit to the RAC the corrective measures they have taken or intend to take. If remedial actions cannot be instituted immediately, then a detailed plan scheduling and implementing remedial actions must be provided.

Recommendations for correcting deficiencies are listed in continuing numerical sequence following the critique of each observed function.

Herein is an example of the format to be used when indicating remedial actions.

CRITIQUE: "The exercise was terminated without proper reduction from the 'General Emergency' classification."

Sample: RECOMMENDATION #1.

Exercise Controllers have been directed to terminate future exercises after the nuclear plant is released from "General Emergency" status and appropriate re-entry and recovery actions are taken according to State and local plans and procedures.

10. The Regional Director of FEMA is responsible for certifying to the FEMA Associate Director, Radiological Emergency Planning, Washington, D. C., that any deficiencies noted in the exercise have been corrected and such corrections incorporated in the plan.

A State which seeks review and approval by FEMA of its plan, with annexes, shall submit an application for review and approval to the FEMA Regional Director of the Region in which the State is located. The application, in the form of a letter from the Governor or other State official as the Governor may designate, shall contain one copy of the completed State plan with an indication that deficiencies have been corrected.

Upon receipt of a State plan from the Regional Director, the Associate Director shall cause copies of the plan together with the Regional Director's evaluation, to be distributed to the members of the Federal Inter-agency Central Coordinating Committee (FICCC) and other FEMA offices with appropriate guidance relative to their assistance in the FEMA review process as described in

44 CFE Part 350, Federal Register, Volume 45, Number 123, Tuesday, June 24, 1980 (Review and Approval of State and Local Radiological Emergency Plans and Preparedness). The Associate Director shall conduct such reviews of the State plan as deemed necessary prior to its being forwarded to the appropriate NRC licensing bodies.

II. EXECUTIVE SUMMARY

The consensus of the 23 members of the Federal Observer Team was that the objectives of the exercise were achieved and performance by participating agencies showed ongoing improvement of capabilities since the previous exercise in support of the Big Rock Point Nuclear Power Plant in Charlevoix County. The State and local governments demonstrated an outstanding capability to protect the public in the event of a nuclear emergency. However, while the State and Berrien County carried out a highly satisfactory response in a professional manner, some deficiencies were observed and improvements are recommended.

The objective of the exercise was to assess the capability of the State of Michigan and local governments (primarily Berrien County) to protect the public in the event of a radiological incident at the Cook Nuclear Power Plant affecting contiguous communities. Review of the adequacy of existing plans and procedures and training - for staff, field and key officials - were also basic objectives of the exercise. Included were familiarization of State and local government emergency personnel with emergency organization, lines of communication, reporting procedures, and interface between the State, local governments and the utility plant in response to various levels of an emergency.

The exercise was structured around an accident at the Cook Nuclear Power Plant which impacts upon surrounding areas, primarily Berrien County. Actions were taken or simulated at State and County levels in accordance with the Michigan Emergency Preparedness Plan and the Berrien County Emergency Operations Plan. Michigan radiological emergency response procedures are an integral part of the Michigan Emergency Preparedness Plan. The Michigan State Police (MSP) (Office of Emergency Services) functions as the coordinator of State and local response. This was achieved in this simulated emergency through communication links, including positioning of a communications van at the MSP Near-Scene State Emergency Operations Center (EOC) at New Buffalo. Coordination of public information was effected through the establishment of Joint Public Information Center (JPIC) at Lake Michigan College, Benton Harbor.

The mutual consensus view of observers and participants was that State and local agencies benefitted greatly from the exercise and that the staff at the Near-Scene EOC demonstrated "excellent ability" to execute the provisions of existing radiological emergency response plans.

Although the public was not directly involved in the exercise, news media reports by TV, radio and newspapers, describing the assumed emergency and simulated public protective actions response (shelter, evacuation, etc.) should have aided in familiarizing the public with information about what to do in an actual emergency.

III. EXERCISE SCENARIO

Synopsis and Critique

The exercise scenario was designed to provide an outline of a natural or expected course of events leading to and including a nuclear emergency at the Donald C. Cook Nuclear Power Plant, in Berrien County, Michigan.

The assumptions, underlying this accident sequence were that the "Alert" started at approximately 5:30 a.m., October 9, preceded by a notification of Unusual Event to local authorities from 4 to 6 hours before the "Alert". The "Alert" lasted approximately 4 hours, followed by a General Emergency for approximately 2 hours. One hour before the end of the drill an Unusual Event condition was declared to permit State and local authorities to move into recovery actions.

Both units were operating at full power. At 10:00 p.m. the failed fuel detector on Unit 1 took a step increase. There was no indication that a plant transient occurred. A reactor coolant sample was taken. Results of the laboratory analysis of the sample was expected in two hours.

At 12:00 midnight the laboratory analysis indicated a coolant activity of 0.5 uCi/gram dose equivalent I-131. This is equivalent to about 0.1% failed fuel which is an "Unusual Event" as per NUREG-0610. This is one-half of the technical specification limit. Therefore, full power operation continued.

The Plant Manager notified the Sheriff and State Police at 12:00 midnight of this "Unusual Event".

At 5:00 a.m. charging flow began to increase and a small primary system leak appeared to be the cause. The Plant Manager notified the Sheriff and State Police of this condition and advised them it also is an "Unusual Event". The leak rate was within technical specification limits but a "controlled" shutdown was initiated.

Containment activity monitors began to increase. At 5:30 a.m. the charging pump flow indicated a primary system leak rate of 55 gpm. The controlled shutdown was continued to minimize thermal stresses on the fuel cladding and primary system leak. This "Alert" condition was by NUREG-0610, (NUREG 0654, Appendix 1) definition.

No releases of radioactivity to atmosphere had been made. An emergency team was sent to the site boundary to verify no off-site doses were present.

The Plant Manager notified the Sheriff and State Police at 5:30 a.m. of the "Alert" condition.

At 6:00 a.m. the Berrien County EOC was manned and personnel were briefed on Cook Unit 1 status.

At 7:00 a.m. Unit 1 was at Hot Standby - Mode 3 - 0% Reactor Power, 547° F, 2235 psig. Primary System Leak Rate remained at 55 gpm.

At 7:30 a.m. Unit 1 was at 500°, 2200 psig - Mode 3 - 0° Reactor Power and primary system leak rate was reduced to 0 gpm.

At 8:00 a.m. State EOC representatives arrived and were briefed on Cook Unit 1 status.

At 9:30 a.m. Unit 1 was at Hot Standby - Mode 3 - 0% Reactor Power, 500°F average coolant temperature, 2200 psig coolant pressure.

A simulated large Loss of Coolant Accident occurred in containment and high unit vent activity indicated that the containment had not been fully isolated. R-31 and R-32 read off-scale. Sample analysis indicated Noble gases being released. Projected off-site doses were 4 Rem/hr. whole body and .2 Rem/hr. thyroid.

The release path to the unit vent was not known, for the purposes of the exercise. Cause of system failure was unknown.

A "General Emergency" was declared at 9:30 a.m. and the Plant Manager notified the State Police and the Sheriff.

Wind was 8 mpg blowing towards 100°.

Stability Class E

The radiation monitoring team at the site boundary measured 4 REM/hr. whole body and .2 REM/hr. thyroid at the centerline of the plume.

At 11:30 a.m. the release was isolated. The Plant Manager notified the Sheriff and State Police.

At 12:00 Noon, 48 hours later, the State Police downgraded the "General Emergency" to "Unusual Event" status. No off-site radiation readings were present.

The radiological emergency on which the exercise was based was hypothetical and is not indicative of the probability of, or possible scope of an accident. It was used to insure that participants were capable of implementing all aspects of the plans and meet the objectives of the exercise. The utility, State agencies, and local governments responded in accordance with the procedures outlined in their respective plans.

The compressed scenario time frame led to an artificial mobilization of personnel and initiation of response activities. Many personnel were in position prior to event occurrence, and some activities were initiated prior to the time that they could have actually occurred in a real situation. For example, the MSP communications van was in position at the On-Scene State EOC and ready to operate at the beginning of the exercise. In reality, it would have taken several hours to be alerted and moved from Lansing (its normal location) to the Near-Scene State EOC at New Buffalo. However, it could have been in place according to the time allotted for alert in the scenario.) Thus, mobilization functions could not be observed and evaluated under realistic conditions.

The scenario also failed to include sufficient interaction between the plant and local emergency response functions, such as police, fire, and medical; and more time should be allocated for actions under "General Emergency" in order to derive maximum benefit for such exercises.

RECOMMENDATIONS:

1. Future exercise scenarios should provide ample opportunities to demonstrate State and local capabilities to respond. (Ref: NUREG-0654-N.1, N.3.)
2. Exercises should include involvement of Berrien County's plan (Sheriff's Department, local personnel, fire, engineering, etc.) during the first few hours when local officials must handle the situation before State and Federal assistance arrives.
3. Scenarios should allow sufficient time under "General Emergency" to permit maximum participation by all elements. Also, appropriate interface with responsible Federal agencies should be included (even if only simulated). (Ref: NUREG-0654-C.1)
4. Exercises should involve more local government/nuclear power plant interaction (not simulation alone), such as token fire accidents at the plant in which local government help is needed, and removal of radiologically contaminated patients from the plant to the local hospital, etc. (Ref: NUREG-0654 N.1 & N.3).

IV. EVALUATIONS

A. ASSIGNMENT OF RESPONSIBILITY(ORGANIZATIONAL CONTROL)

STATE EOC:

All observers rated this important function as outstanding. The exceptional professional competence of the Michigan State Police and other State agency EOC staff personnel was impressive. However, several improvements are recommended.

Expertise was displayed by the staffs of all departments during both shifts.

Coordination was timely and appropriate and actions were implemented quickly following receipt of information. EPA guidelines and PAGs were available, but there was an absence of checklists in radiological staff operations.

There were some delays in delivery of written messages to the Near-Scene State EOC from the communications van which had an adverse impact on timely decision making.

Detouring of traffic from Interstate 94 used a segment of two-lane highway being utilized as an evacuation route which could have hampered evacuation operations.

RECOMMENDATIONS:

5. A system of priority classification needs to be developed to facilitate distribution of urgent and high priority messages. Urgent messages should be transmitted from the van by telephone, followed by hard copy. (Ref: NUREG-0654 F.1)
6. Close coordination is required between traffic control at the State Near-Scene EOC and evacuation movement functions at the County. State personnel have to be familiar with County evacuation plans and routes. (Ref: NUREG-0654 J.10).

BERRIEN COUNTY EOC:

Berrien County's Direction and Control capability was rated excellent. Operations were conducted in a professional manner. Coordination was good and decisions were made rapidly. Emergency plans were consulted and individuals on the EOC staff knew the provisions of the plans. There was adequate consultation between staff elements.

RECOMMENDATIONS:

None

B. ONSITE EMERGENCY ORGANIZATION

Section B, NUREG 0654 FEMA - REP 1, pertains only to licensee responsibilities for emergency response and is not included in the exercise evaluation of State and local plans.

C. EMERGENCY RESPONSE SUPPORT AND RESOURCES

STATE:

Though evidence existed that there were arrangements for requesting and effectively using assistance resources from whatever source beyond the principal organizations, the State EOC was slow in advising the Federal Aeronautics Administration and others concerning restrictions on air travel over the affected area. Federal agency representatives were not present at the On-Scene Emergency Operations Center.

RECOMMENDATION:

7. Emphasis should be placed on the need for prompt notification of Federal agencies as well as interfacing with Federal agencies in event of a nuclear emergency. (Ref: NUREG 0654-C.2, H.3, J.10)

D. EMERGENCY CLASSIFICATION SYSTEM

STATE/BERRIEN COUNTY:

Use of the Standard Emergency Classification System and action level scheme consistent with those established by the utility and local response plan were adequately addressed during the exercise.

Participants were aware of the correct event classification and required actions for each classification were well demonstrated during the exercise.

RECOMMENDATIONS:

None

E. NOTIFICATION METHODS AND PROCEDURES

STATE/BERRIEN COUNTY:

Notification methods and procedures demonstrated during the exercise were considered good but some significant improvements are recommended.

Improved point-to-point communications (MSP) capability from the On-Scene State EOC, the Berrien County EOC and the Cook Nuclear Power Plant at Bridgman are needed for more prompt and effective operational communications.

The Berrien County log indicated timely notification of personnel. There is a need for more understandable information for the public concerning the areas covered by evacuation sectors, instead of merely identifying sectors to be evacuated by letters (such as Sectors A, J, K, etc.)

RECOMMENDATIONS:

8. The MSP communications capability from the Near-Scene State EOC and Berrien County EOC to the Cook Nuclear Power Plant at Bridgman on a point-to-point basis needs to be improved. (See Recommendations, under "F. Communications.")
9. In order to assure prompt and efficient evacuation when so ordered, information to the media concerning evacuation sectors should be described in terms known to the inhabitants involved. (Ref: NUREG-0654 G.2-J.10).

F. EMERGENCY COMMUNICATIONS

STATE/BERRIEN COUNTY/COMMUNICATIONS VAN:

The exercise demonstrated a good capability for prompt communication exists among principal response organizations but some significant improvements are recommended.

Emergency communications at the State Near-Scene EOC were rated by observers as "good to excellent!" Especially noteworthy was the efficient handling of messages by assigned State agency personnel within the operations room. The EOC loudspeaker system could be amplified.

Observers rated Berrien County EOC communications capabilities and performance as outstanding. The dispatcher at the Berrien County Communications center performed his duties very well.

During the exercise, police radio communications in the field experienced a "jamming" problem which detracted from effective communications, possibly caused by CB's.

The communication systems in the MSP radio van at the State Near-Scene EOC need testing to assure continuous readiness capability. Without the communications van, radio communications would be limited to two MSP frequencies. Also, the capability for forwarding copies of radio communications to local governments through another MSP post is limited.

There is no fallout protection for the communications van.

There is too much reliance on messengers to relay messages from the communications van to Operations. Some messages of importance took too long to get to the responsible agency. It took 21 minutes to deliver a message regarding the "Site Emergency" declaration to RAD Health between the communications van and the operations room).

More benefits would result from additional full-scale exercises with the power plant.

RECOMMENDATIONS:

10. The MSP field radio communications system should be investigated and "jamming" problems identified and rectified. (Ref: NUREG-0654 F.1).
11. A program of exercising and testing of the communications systems in the MSP Near-Scene State EOC communications van should be developed and implemented to assure adequate operational readiness. (Ref: NUREG-0654 N.2).

G. PUBLIC EDUCATION AND INFORMATION

An outstanding capability to assure that accurate and timely emergency information is provided to the public was demonstrated at the Joint Public Information Center (JPIC) established at Lake Michigan College, Benton Harbor.

The State Police Public Information Center (PIO) at the near-scene State EOC worked with the executive group and made contact as needed with the Governor's PIO at the Joint Public Information Center (JPIC). JPIC briefings were held for the media - not less than hourly. News coordination among spokespersons appeared excellent.

News media representatives were concerned that they may not be receiving all of the information they should have at the briefings, based on the T.M.I. experience. Reporters were comfortable dealing with plant spokesmen with whom they were acquainted.

There is need for a multiplex audio feed for direct pick-up from the JPIC to radio stations to facilitate efficient and timely dissemination of emergency information.

More visuals and media information kits, to include maps and basic local data, for the media representatives would have improved the JPIC function.

Relevant area telephone directories were not available for media representatives in the JPIC press room.

Public information news releases were not delivered to the Berrien County EOC for the benefit of the staff.

Restrooms were located outside the interim Berrien County EOC and the JPIC security areas which caused some difficulties.

RECOMMENDATIONS:

12. An NRC representative should be assigned to the JPIC to advise media representatives.

Federal agency representatives should use the JPIC for their briefings to the press. (Ref: NUREG-0654 G.3).

13. The JPIC should provide a multiplex to facilitate prompt and efficient coordination with the radio stations; also, develop more visuals for JPIC briefings; and provide media representatives with a media kit (maps, local data, etc.). (Ref: NUREG-0654 G.3).
14. Provide appropriate current area telephone directories for use by media representatives in the JPIC press room. (Ref: NUREG-0654 G. 3.4).
15. The location of the C space and security area should include restrooms. It is understood the new Berrien County EOC will not have this problem. (Ref: NUREG-0654 G.3)

H. EMERGENCY FACILITIES AND EQUIPMENT

The exercise demonstrated that good emergency facilities and equipment to support the emergency response were provided and that each organization has established an Emergency Operations Center (EOC) to carry out response functions. However, some significant improvements are recommended.

STATE NEAR-SCENE EOC:

State Near-Scene EOC Facilities were good although there was limited space, crowded conditions and poor ventilation which could cause problems if the facility were used for extended operations.

The auxiliary generator was not working due to repairs being made to the electrical control box.

The Radiological Officer experienced some difficulty doing his job in the existing working environment. To facilitate radiological operations, a separate room is needed at the State Near-Scene EOC, where plotting and calculations can be conducted quietly.

Desk maps were used by officials rather than wall maps. Existing maps used by radiological staff in the EOC need to be improved.

EOC map and display deficiencies (other than radiological) included the Sector Map - "A Sector", which was not on True-North.

The status boards used required erasing preceding information which precluded showing both past and present status of events.

EOC staff members were not kept aware of what was happening in the outside world (which is especially important during protracted operations.) The need for floor tiles and other necessary floor protection improvements was also noted.

RECOMMENDATIONS:

16. In the On-Scene State EOC, a separate room should be arranged for the Radiological Officer and staff away from the main operations room to facilitate more effective radiological staff operations while retaining a position for the RDO in the main operations room for participation in staff briefings and deliberations. (Ref: NUREG-0654 H.12). A room next to the Operations Room should be considered.

17. Radiological maps at the Near Scene State EOC should be reviewed to eliminate unnecessary maps and include better maps for indicating plume direction, sampling points, schools, hospitals, population distribution, and radiological plots - possibly using 2' (two minute) U. S. Geological Survey maps.

The North - South line, starting with the "A Sector" of the Sector Map should be rectified to show True-North. (Ref: NUREG-0654 - H.3 and H.12).

18. The Status Board should be improved to reflect past and present data and information, possibly by use of a flip chart. (Ref: NUREG=0654 H.3).
19. EOC's should be equipped with public broadcast radio and/or TV receivers so staff members will know what is going on in the outside world - especially during extended operations. (Ref: NUREG-0654 H.3).
20. The basement of the MSP post at New Buffalo should be repaired to include floor tile and flood protection improvements for safety of the EOC staff. (Ref: NUREG-0654 H.3)

BERRIEN COUNTY EOC:

No problems of significance were encountered at the interim Berrien County EOC which will be replaced by a permanent facility in May 1981.

The Berrien County staff did an excellent job of demonstrating to observers their capability to perform the requirements of their radiological emergency response plans and procedures.

However, some important decisions such as the decision to advise farmers to feed cattle with stored feed were not posted on status boards.

The re-entry authorization by the Governor should not be posted until the "General Emergency" classification is lowered to the appropriate less-severe classification.

RECOMMENDATIONS:

21. Procedures should be developed to assure that important decisions are posted on EOC status boards for the information and guidance of all concerned and training should be given to appropriate EOC staff personnel to assure the proper posting of alert classifications at all times. (Ref: NUREG-0654 H.3 & D.3).

I. ACCIDENT ASSESSMENT

STATE/BERRIEN COUNTY:

The state demonstrated during the exercise that it has a good capability to provide methods, equipment and expertise for rapid accident assessment of a real or potential radiological hazards existing in liquid or gaseous pathways. This includes activation, notification, transportation, communication and monitoring equipment. However, some improvements are recommended.

Field monitoring teams were used to adequately demonstrate their sampling and monitoring capability. Corroborative calculations by RAD Health dose projections could have been more timely but there was no significant impact on decision-making in this instance. Adequate transportation with full communications capability was provided by State Police vehicles. This was the second time State field monitoring teams were exercised in Michigan.

Restricted areas were identified and Highway Department vehicles were dispatched to intersections to be closed with barricades to simulate roadblocks. KI was available if needed.

Radioiodine measurements in the field are taken by collecting samples on silver zeolite filters and measuring the radiation on the filter with a survey meter (micro R meter) with a NaI detector. It is questionable whether 10^{-7} uCi/cc can be measured with this technique in the presence of noble gases. Field measurements were radioed to the EOC, presumably for comparing these measurements with projected dose rates in the Protective Action Guides. The State Department of Health has purchased a mobile laboratory for which equipment still needs to be installed.

Activity in this element by the Berrien County EOC personnel was satisfactory. KI and dosimeters were correctly ordered for emergency workers in a timely manner.

RECOMMENDATIONS:

22. Teams need to conduct vegetation sampling, water sampling, and ambient environmental monitoring operations during a nuclear emergency. (Ref: NUREG-I.8, 0.1.)

J. PROTECTIVE RESPONSE

STATE:

In the opinion of observers the State demonstrated a good capability for making appropriate decisions for taking protective actions during the exercise.

The State radiological emergency plan includes a range of protective actions for the plume exposure pathway EPZ for emergency workers and for the public, and provides guidelines for choosing such actions during a radiological emergency.

Provisions for use of radioprotective drugs were made during the exercise at both the Near-Scene State EOC and Berrien County EOC.

Access control for evacuated areas was demonstrated through the dispatching of Highway Department vehicles carrying barricades to the appropriate intersections where roadblocks were to have been set up.

LOCAL:

Some personnel assigned to reception centers appeared to be in need of more training regarding performance of this element of their emergency duties.

RECOMMENDATION:

23. A systematic and continuing training program should be developed for Reception Center personnel, including a sample caseload of evacuees such as high school biology students. (Ref: NUPEG 0654-J.10).

K. RADIOLOGICAL EXPOSURE CONTROL

STATE/LOCAL:

The exercise demonstrated that means for controlling radiological exposures for workers in an emergency do exist including exposure guidelines consistent with EPA Emergency Worker and Lifesaving Activity Protective Action Guides.

RECOMMENDATIONS:

None

M. RECOVERY AND RE-ENTRY PLANNING AND POST-ACCIDENT OPERATIONS

STATE/LOCAL:

The State has developed appropriate plans for recovery, re-entry and post-accident operations. However, at both the State and Berrien County EOC's their capabilities in this area were not demonstrated during the exercise.

RECOMMENDATION:

25. Both the State and Berrien County EOC's should demonstrate their capabilities in recovery, re-entry and post-accident operations during future exercises. (Ref: NUREG 0654-M.1, M.3).

N. EXERCISES AND DRILLS

State/local jurisdictions held several drills and conducted several Public Officials Conferences in preparation for this exercise.

RECOMMENDATION:

26. Periodic exercises should continue to be conducted in order to evaluate major portions of emergency response capabilities; periodic drills should be conducted to develop and maintain key skills and deficiencies identified as a result of exercise or drills are to be corrected, as detailed in NUREG 0654, Section N.

O. RADIOLOGICAL EMERGENCY RESPONSE TRAINING

RECOMMENDATIONS:

27. Each organization shall establish a training program for instructing and qualifying personnel who will implement radiological emergency response plans. The specialized initial training and periodic retraining programs (including the scope, nature, and frequency) should be provided for radiological monitoring teams and radiological analysis personnel. (Ref: NUREG 0654 0.4c).