



Federal Emergency Management Agency

Washington, D.C. 20472

FEB 22 1991

Mr. Frank J. Congel, Director
Division of Radiation Protection
and Emergency Preparedness
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Dear Mr. Congel:

Enclosed is a copy of the final exercise report for the October 17-20, 1989, exercise of the offsite radiological emergency response plans, site-specific to the Three Mile Island Nuclear Station. The final report was received in our office on January 29, 1991. Participants in this exercise included The General Public Utility Nuclear Corporation, Commonwealth of Pennsylvania, municipal and county jurisdictions located partially or totally within the 10-mile Plume Emergency Planning Zone (EPZ) of the Three Mile Island Nuclear Station, six support counties, and the remaining five counties located totally or partially within the 50-mile Ingestion Pathway EPZ. The report was prepared by the Federal Emergency Management Agency (FEMA) Region III staff.

One Deficiency involving the alert and notification capabilities of the Commonwealth of Pennsylvania and Lancaster, Cumberland, and Dauphin Counties was identified during the October 17-20, 1989, exercise. In addition, 30 Areas Requiring Corrective Action were identified. The Deficiency was corrected through the conduct of a remedial exercise on February 7, 1990, involving the participation of the Commonwealth of Pennsylvania (Emergency Operations Center) and Cumberland and Lancaster Counties. During the remedial exercise, these jurisdictions adequately demonstrated the ability to initially alert the public within the 10-mile EPZ and begin dissemination of an instructional message within 15 minutes of a decision by the appropriate State officials. The part of the Deficiency involving Dauphin County was corrected by the designation of a new primary Emergency Broadcast System (EBS) Station to assure the immediate broadcast of an EBS message upon request from the Dauphin County Emergency Operations Center.

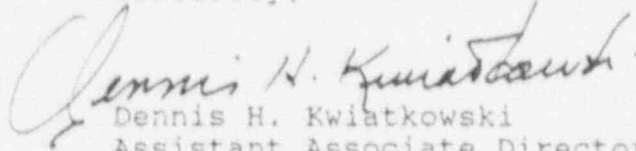
Based on the results of the October 17-20, 1989, exercise, the February 7, 1990, remedial exercise, and the designation of a new EBS Station in Dauphin County; FEMA has concluded that the offsite radiological emergency preparedness at the Three Mile Island Nuclear Station is adequate to provide reasonable assurance that appropriate measures can be taken offsite to protect the health and safety of the public in the event of a radiological emergency at the site.

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PDR

The FEMA Region III staff will forward a copy of this final exercise report to the Commonwealth of Pennsylvania.

Should you have any questions, please feel free to contact Craig S. Wingo, Chief, Technological Hazards Division, at (202) 646-3026.

Sincerely,



Dennis H. Kwiatkowski
Assistant Associate Director
Office of Natural and Technological Hazards

Enclosure

RADIOLOGICAL EMERGENCY PREPAREDNESS
EXERCISE EVALUATION REPORT

FACILITY: THREE MILE ISLAND NUCLEAR STATION
OPERATOR: THE GENERAL PUBLIC UTILITY NUCLEAR CORPORATION
LOCATION: LONDONDERRY TOWNSHIP, PENNSYLVANIA

REPORT DATE: AUGUST 29, 1990 (FINAL)
EXERCISE DATES: OCTOBER 17 through 20, 1989

PARTICIPATING JURISDICTIONS:

COMMONWEALTH OF PENNSYLVANIA

RISK COUNTIES:

CUMBERLAND, DAUPHIN, LANCASTER, LEBANON, AND YORK

SUPPORT COUNTIES:

ADAMS, BERKS, FRANKLIN, NORTHUMBERLAND, SCHUYLKILL, AND SNYDER

ADDITIONAL INGESTION PATHWAY COUNTIES:

CHESTER, COLUMBIA, JUNIATA, MIFFLIN, AND PERRY

THIRTY-SIX MUNICIPALITIES

TWELVE SCHOOL DISTRICTS

NON-PARTICIPATING JURISDICTIONS: NONE

REPORT PREPARED BY: FEDERAL EMERGENCY MANAGEMENT AGENCY AND THE
REGIONAL ASSISTANCE COMMITTEE, REGION III,
PHILADELPHIA, PENNSYLVANIA

Prepared in accordance with 44 CFR 350; and NUREG-0654/FEMA-REP-
1, Rev. 1, November 1980.

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EXECUTIVE SUMMARY

This document is the Post Exercise Evaluation Report on the joint, biennial Radiological Emergency Preparedness Exercise for the Three Mile Island Nuclear Station conducted October 17 through 20, 1989. The report has been prepared in accordance with 44 CFR 350, NUREG-0654, REP . Rev-1, and FEMA Guidance Memorandum EX-3 (2/26/88). Exercise participants include the Commonwealth of Pennsylvania, the municipal and county jurisdictions located totally or partially within the 10-mile Emergency Planning Zone (EPZ) of the Three Mile Island Nuclear Station, six support counties, and the remaining five counties located totally or partially within the 50 mile Ingestion Pathway EPZ.

Conduct of this announced exercise encompassed three response phases. Emergency measures addressing the Plume Phase of the simulated incident were demonstrated by all participating jurisdictions located partially or totally within the 10 mile EPZ on October 17; emergency measures related to the Ingestion Pathway and the "Recovery, Reentry and Relocation" Phased were demonstrated by the participating Commonwealth and county agencies on October 19 and 20, 1989.

One Deficiency was identified during the exercise. The ability to initially alert the public within the 10 mile EPZ and begin dissemination of an instructional message within 15 minutes of the decision by the appropriate State official, was not adequately demonstrated as required by NUREG-0654 and specified by FEMA Guidance Memorandum AN-1 (4/21/87). This deficiency was corrected through the conduct of a remedial exercise on February 7, 1990, involving the participation of the State EOC and certain risk counties.

Thirty less serious problem areas were identified during the exercise that will also require corrective action. These inadequacies vary in significance, ranging from minor problems such as the failure to utilize plan prescribed message forms, to other issues of greater concern, as in the lack of coordination concerning a key agricultural protective action on part of the State and risk counties. Correction of these inadequacies should be demonstrated during the next biennial exercise.

The report also identifies twenty-five areas recommended for improvement that were observed during the exercise. These are not considered to adversely impact public safety, and do not require corrective action. These issues serve as advisory recommendations that, if adopted, should enhance the offsite response to a radiological emergency at the Three Mile Island Nuclear Station.

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I. INTRODUCTION

A. BACKGROUND

Federal requirements dictate that periodic Radiological Emergency Response Preparedness exercises be conducted to evaluate the emergency response capabilities of State and local jurisdictions located within the emergency planning zones around commercial nuclear power plants. The exercises test a major portion of the basic elements of the emergency preparedness plans of these jurisdictions. The exercises simulate a coordinated response by State and local authorities along with the Utility, to include mobilization of personnel and resources adequate to verify the capability to deal with an accident scenario requiring responses up to, and including, evacuation. This was the fifth full participation exercise for the Three Mile Island Nuclear Station. The last full participation exercise was conducted on October 22, 1987.

The purpose of this report is to record the capabilities of State and local governments to respond to an accident at the Three Mile Island Nuclear Station based upon actual demonstration or simulation of their abilities during the joint, full participation exercise conducted on October 17 through 20, 1989. Exercise issues classified as a Deficiency or Area Requiring Corrective Action have been identified; recommendations for corrective actions have been provided that will help to improve preparedness and response capabilities. Areas Recommended for Improvement, where corrective action is not mandated, have also been identified. Adoption of these recommendations should enhance the respective organization's level of emergency preparedness.

The exercise was evaluated by a team comprising individuals from FEMA Region III, the Regional Assistance Committee, Idaho National Energy Laboratory (INEL), Argonne National Laboratory (ANL), and the Center for Planning and Research (CPR).

B. EVALUATION CRITERIA USED

The State and local governments participating in the 1989 Three Mile Island Exercise were evaluated in terms of their ability to respond to an incident as prescribed by their emergency plans. The plans utilized during the response are as listed below:

1. Annex E, "Radiological Emergency Response to Nuclear Power Plant Incidents," November 1981, revised December 1988, to the Commonwealth of Pennsylvania Emergency Operations Plan.
2. Cumberland County Emergency Operations Plan, Annex E, Draft, September 1989.
3. Dauphin County Emergency Operations Plan, Annex E, Draft, September 1989.
4. Lancaster County Emergency Operations Plan, Annex E, Draft, August 1989.
5. Lebanon County Emergency Operations Plan, Annex E, Draft, August 1989.
6. York County Emergency Operations Plan, Annex E, Draft, August 1989.
7. Adams County Emergency Operations Plan, Annex E, March 1989.
8. Berks County Emergency Operations Plan, Annex E, Draft, August 1989.
9. Franklin County Emergency Operations Plan, Annex E, Draft, March 1989.
10. Northumberland County Emergency Operations Plan, Annex E, Draft, February 1989.
11. Schuylkill County Emergency Operations Plan, Annex E, January 1989.
12. Snyder County Emergency Operations Plan, Annex E, April 1989.
13. Thirty-three Municipal Emergency Operations Plans.

14. Twelve School District Radiological Emergency Response Plans for Incidents at the Three Mile Island Nuclear Station.

These plans were prepared under the authority of the Pennsylvania Emergency Management Services Act of 1978, P.L. 1332, and were developed in accordance with NUREG-0654/FEMA REP-1, Rev. 1, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants", November 1980.

II. OBJECTIVES

A. LIST OF OBJECTIVES

A list of 37 standard objectives for joint, biennial exercises was established with the issuance of FEMA Guidance Memorandum EX-3 (February 26, 1988), for purposes of assuring compliance with NUREG-0654/FEMA-REP-1, Rev. 1. This list, in its entirety, can be found below, accompanied by references to respective NUREG-0654/FEMA-REP-1, Planning Standards and Evaluation Criteria.

The objectives are classified into three groups. Not all 37 objectives are required to be demonstrated at every exercise; Core objectives (Group A) are to be demonstrated at every biennial exercise as they apply, while applicable Group B and C objectives must be demonstrated at least once every six years. Those objectives chosen for demonstration during the 1989 Three Mile Island joint, biennial exercise are denoted by an asterisk (*).

OBJECTIVE NUMBER

NUREG-0654/
FEMA-REP-1

GROUP A - CORE OBJECTIVES THAT ARE SCENARIO INDEPENDENT

EMERGENCY CLASSIFICATION LEVELS

- *1. Demonstrate the ability to monitor, understand and use emergency classification levels (ECL) through the appropriate implementation of emergency functions and activities corresponding to ECLs as required by the scenario. The four ECLs are: Notification of unusual event, alert, site area emergency, and general emergency. D.3
D.4

MOBILIZATION OF EMERGENCY PERSONNEL

- *2. Demonstrate the ability to fully alert, mobilize and activate personnel for both facility and field-based emergency functions. E.1
E.2

DIRECTION AND CONTROL

- *3. Demonstrate the ability to direct, coordinate and control emergency activities. A.1.d
A.2.a

COMMUNICATIONS

- *4. Demonstrate the ability to communicate with all appropriate locations, organizations and field personnel. F.

FACILITIES EQUIPMENT AND DISPLAYS

- *5. Demonstrate the adequacy of facilities, equipment, displays and other materials to support emergency operations. G.3.a,
H.2, 3

EMERGENCY WORKER EXPOSURE CONTROL

- *6. Demonstrate the ability to continuously monitor and control emergency worker exposure. K.3

FIELD RADIOLOGICAL MONITORING

- *7. Demonstrate the appropriate equipment and procedures for determining field radiation measurement. I.8, 11
- *8. Demonstrate the appropriate equipment and procedures for the measurement of airborne radiiodine concentrations as low as 10^{-7} microcurie per cc in the presence of noble gases. I.9
- *9. Demonstrate the ability to obtain samples of particulate activity in the airborne plume and promptly perform laboratory analyses. I.10

PLUME DOSE PROJECTION

- *10. Demonstrate the ability, within the plume exposure pathway, to project dosage to the public via plume exposure, based on plant and field data. I.10

PLUME PROTECTIVE ACTION DECISION MAKING

- *11. Demonstrate the ability to make appropriate protective action decisions, based on projected or actual dosage, EPA PAGs, availability of adequate shelter, evacuation time estimates and other relevant factors. J.10.m

ALERT, NOTIFICATION AND EMERGENCY INFORMATION

- *12. Demonstrate the ability to initially alert the public within the 10-mile EPZ and begin dissemination of an instructional message within 15 minutes of a decision by appropriate State and/or local official(s). E.6
- *13. Demonstrate the ability to coordinate the formulation and dissemination of accurate information and instructions to the public in a timely fashion after the initial alert and notification has occurred. E.5,
G.4.b
- *14. Demonstrate the ability to brief the media in an accurate, coordinated and timely manner. G.3.a,
G.4.a
- *15. Demonstrate the ability to establish and operate rumor control in a coordinated and timely fashion. G.4.c

GROUP B - SCENARIO-DEPENDENT OBJECTIVES

USE OF POTASSIUM IODIDE (KI)

- *16. Demonstrate the ability to make the decision to recommend the use of KI to emergency workers and institutionalized persons, based on predetermined criteria, as well as to distribute and administer it once the decision is made, if necessitated by radioiodine releases. J.10.e, f
17. Demonstrate the ability to make the decision, if the State plan so specifies, to recommend the use of KI for the general public, based on predetermined criteria, as well as to distribute and administer it once the decision is made, if necessitated by radioiodine releases. J.10.f

IMPLEMENTATION OF PROTECTIVE ACTIONS

- *18. Demonstrate the ability and resources necessary to implement appropriate protective actions for the impacted permanent and transient plume EPZ population (including transit-dependent persons, special needs populations, handicapped persons and institutionalized persons). J.9,
J.10.d, g

- *19. Demonstrate the ability and resources necessary to implement appropriate protective actions for school children within the plume EPZ. J.9, J.10.g

TRAFFIC CONTROL

- *20. Demonstrate the organizational ability and resources necessary to control evacuation traffic flow and to control access to evacuated and sheltered areas. J.10.j, k

RELOCATION CENTERS (REGISTRATION, MONITORING, CONGREGATE CARE AND DECONTAMINATION)

- *21. Demonstrate the adequacy of procedures, facilities, equipment and personnel for the registration, radiological monitoring and decontamination of evacuees. J.12
- *22. Demonstrate the adequacy of facilities, equipment and personnel for congregate care of evacuees. J.10.h

MEDICAL SERVICES (TRANSPORTATION AND FACILITIES)

- *23. Demonstrate the adequacy of vehicles, equipment, procedures and personnel for transporting contaminated, injured or exposed individuals. L.4
- *24. Demonstrate the adequacy of medical facilities equipment, procedures and personnel for handling contaminated, injured or exposed individuals. L.1

DECONTAMINATION

- *25. Demonstrate the adequacy of facilities, equipment, supplies, procedures and personnel for decontamination of emergency workers, equipment and vehicles, and for waste disposal. K.5.a, b

GROUP C - OTHER OBJECTIVES: TO BE DEMONSTRATED AT LEAST ONCE EVERY SIX YEARS

SUPPLEMENTARY ASSISTANCE (FEDERAL/OTHER)

- *26. Demonstrate the ability to identify the need for and call upon Federal and other outside support agencies' assistance. C.1.a, b

INGESTION EXPOSURE PATHWAY

- *27. Demonstrate the appropriate use of equipment and procedures for collection and transport of samples of vegetation, food crops, milk, meat, poultry, water and animal feeds (indigenous to the area and stored). I.8,
J.11
- *28. Demonstrate the appropriate lab operations and procedures for measuring and analyzing samples of vegetation, food crops, milk, meat, poultry, water and animal feeds (indigenous to the area and stored). C.3,
J.11
- *29. Demonstrate the ability to project dosage to the public for Ingestion Pathway exposure and determine appropriate protective measures based on field data, FDA PAGs and other relevant factors. I.10,
J.9,
J.11
- *30. Demonstrate the ability to implement both preventive and emergency protective actions for Ingestion Pathway hazards. J.9,
J.11

RECOVERY, REENTRY AND RELOCATION

- 31. Demonstrate the ability to estimate total population exposure. M.4
- *32. Demonstrate the ability to determine appropriate measures for controlled reentry and recovery based on estimated total population exposure, available EPA PAGs and other relevant factors. M.1
- *33. Demonstrate the ability to implement appropriate measures for controlled reentry and recovery. M.1

MOBILIZATION OF EMERGENCY PERSONNEL (24-HOUR, CONTINUOUS BASIS)

- *34. Demonstrate the ability to maintain staffing on a continuous 24-hour basis by an actual shift change. A.1.e,
A.4

EVACUATION OF ONSITE PERSONNEL

- *35. Demonstrate the ability to coordinate the evacuation of onsite personnel. B.6,
J.2

UNANNOUNCED AND OFF-HOURS

36. Demonstrate the ability to carry out emergency response functions (i.e., activate EOC's, mobilize staff that report to the EOC's, establish communications linkages and complete telephone call down) during an unannounced off-hours drill or exercise. N.1.b

UTILITY OFFSITE RESPONSE ORGANIZATIONS

37. Demonstrate the capability of utility offsite response organization personnel to interface with non-participating State and local governments through their mobilization and provision of advice and assistance. N.1.b

B. OBJECTIVES NOT ADEQUATELY DEMONSTRATED

The following table identifies those exercise objectives not adequately demonstrated by the associated location and/or activity. The table also lists the related Problem ID, as identified in the Summary List of Issues. The table is followed by a Matrix outlining the accomplishment of all applicable objectives for all locations during the exercise.

<u>Location/Activity</u>	Objective(s) not <u>Achieved</u>	<u>Problem ID</u>
State EOC	12 35	TMIX89-1D TMIX89-7R
Cumberland County EOC	12	TMIX89-1D
Dauphin County EOC	12 35	TMIX89-1D TMIX89-7R
Lower Swatara Township EOC	1	TMIX89-18R
Lancaster County EOC	12	TMIX89-1D
York County Medical Services	23	TMIX89-29R

1989 THREE MILE ISLAND EXERCISE
 ON 31-3 OBJECTIVES EVALUATED

Site/Activity	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	ON	AR	
STATE EOC	Y	Y	Y	Y	Y						Y	N	Y		Y										Y		Y	Y		Y	Y	Y	N				
STATE PUBLIC INFORMATION ACTIVITIES													Y	Y																							
ACCIDENT ASSESSMENT (BBP)	Y	Y	Y	Y	Y					Y	Y																	Y									
EOF	Y	Y		Y	Y																																
FIELD MONITORING TEAMS (BBP)		Y		Y		Y	Y	Y	Y																												
WATER SAMPLING TEAMS (DER)				Y	Y																						Y										
AGRICULTURAL SAMPLING TEAMS (DOA)				Y	Y																						Y										
LAB				Y					Y																			Y									
STATE TRAFFIC/ACCESS CONTROL		Y		Y	Y															Y																	
JOINT INFORMATION CENTER	Y	Y	Y	Y	Y									Y	Y																				Y		
COMBERLAND COUNTY																																					
COUNTY EOC	Y	Y	Y	Y	Y	Y						N	Y	Y	Y	Y													Y				Y	Y			
RECEPTION/MASS CARE CENTERS				Y	Y																																
EMERGENCY WORKER DECON	Y	Y		Y																						Y											

NOTES: Met Objective: Y = Yes; N = No

Objective 36: ON = Unannounced Exercise; AR = After Hours Exercise

1989 THREE MILE ISLAND EXERCISE
 GM XI-3 OBJECTIVES EVALUATED

Site/Activity	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	OR	AB		
WEST SHORE SCHOOL DISTRICT																			Y																			
LOWER ALLEN TOWNSHIP	Y	Y	Y	Y	Y	Y					Y					Y	Y		Y																			
NEW CUMBERLAND BOROUGH	Y	Y	Y	Y	Y	Y					Y					Y	Y		Y																			
DAUPHIN COUNTY																																						
COUNTY EOC	Y	Y	Y	Y	Y	Y						N	Y	Y	Y	Y	Y												Y			Y	Y	N				
RECEPTION/MASS CARE CENTERS				Y		Y															Y	Y																
EMERGENCY WORKER DECON	Y					Y																			Y													
CENTRAL DAUPHIN SCHOOL DISTRICT																																						
DEBBY TOWNSHIP SCHOOL DISTRICT																																						
HARRISBURG SCHOOL DISTRICT																																						
LOWER DAUPHIN SCHOOL DISTRICT																																						
MIDDLETOWN AREA SCHOOL DISTRICT																																						
WILTON BERSHET SCHOOL DISTRICT																																						

NOTES: Met Objective: Y = Yes; N = No Objective 36: OR = Unannounced Exercise; AB = After Hours Exercise

1989 THREE MILE ISLAND EXERCISE
 GW EX-3 OBJECTIVES EVALUATED

Site/Activity	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	UN	AH	
STERLTON-HIGHSPIRE SCHOOL DISTRICT																			Y																		
CONRWAGO TOWNSHIP	Y	Y	Y	Y	Y	Y						Y				Y	Y																				
DEBBY TOWNSHIP	Y	Y	Y	Y	Y	Y						Y				Y	Y		Y																		
HARRISBURG CITY	Y	Y	Y	Y	Y	Y						Y				Y	Y		Y																		
HIGHSPIRE BOROUGH	Y	Y	Y	Y	Y	Y						Y				Y	Y		Y																		
BUNNELSTOWN BOROUGH	Y	Y	Y	Y	Y	Y						Y				Y	Y		Y																		
LONDONDERRY TOWNSHIP	Y	Y	Y	Y	Y	Y						Y				Y	Y		Y																		
LOWER PATTON TOWNSHIP	Y	Y	Y	Y	Y	Y						Y				Y	Y		Y																		
LOWER SWATARA TOWNSHIP	N	Y	Y	Y	Y	Y						Y				Y	Y		Y																		
MIDDLETOWN/ROYALTON BOROUGHS	Y	Y	Y	Y	Y	Y						Y				Y	Y		Y																		
PATTANG BOROUGH	Y	Y	Y	Y	Y	Y						Y				Y	Y		Y																		
SOUTH HANOVER TOWNSHIP	Y	Y	Y	Y	Y	Y						Y				Y	Y		Y																		
STERLTON BOROUGH	Y	Y	Y	Y	Y	Y						Y				Y	Y		Y																		
SWATARA TOWNSHIP	Y	Y	Y	Y	Y	Y						Y				Y	Y		Y																		

NOTES: Met Objective: Y = Yes; N = No Objective 36: UN = Unannounced Exercise; AH = After Hours Exercise

1989 THREE HILK ISLAND EXERCISE
 OBJECTIVES EVALUATED

Site/Activity	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	UN	AR		
LANCASTER COUNTY																																							
COUNTY EOC	Y	Y	Y	Y	Y	Y						N	Y	Y	Y	Y															Y			Y	Y				
RECEPTION/BASS CARR CENTERS				Y	Y																Y																		
EMERGENCY WORKER DECON		Y		Y		Y																				Y													
DORRIGAL SCHOOL DISTRICT																				Y																			
ELIZABETHTOWN AREA SCHOOL DISTRICT																				Y																			
CORNY TOWNSHIP	Y	Y	Y	Y	Y	Y						Y				Y	Y																						
EAST DORRIGAL TOWNSHIP	Y	Y	Y	Y	Y	Y						Y				Y	Y			Y																			
ELIZABETHTOWN BOROUGH	Y	Y	Y	Y	Y	Y						Y				Y	Y			Y																			
HOOPER JOY TOWNSHIP	Y	Y	Y	Y	Y	Y										Y	Y			Y																			
WEST DORRIGAL TOWNSHIP	Y	Y	Y	Y	Y	Y						Y				Y	Y			Y																			
LEBANON COUNTY																																							
COUNTY EOC	Y	Y	Y	Y	Y	Y						Y	Y	Y	Y	Y															Y			Y	Y				

NOTES: Net Objective: Y - Yes; N - No; Objective 36: UN - Unannounced Exercise; AR - After Hours Exercise

1988 TORR HILL ISLAND EXERCISE
 ON AT 3 OBJECTIVES EVALUATED

Site/Activity	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	OR	AR		
RECEPTION/MASS CARE CENTERS				T		T																T	T																
EMERGENCY WORKER DECON		T		T		T																				T													
SOUTH LONDONDERRY TOWNSHIP	T	T	T	T	T	T						T				T	T				T																		
TORR COUNTY																																							
COUNTY EOC	T	T	T	T	T	T						T	T	T	T	T	T																				T	T	
RECEPTION/MASS CARE CENTERS					T	T																																	
EMERGENCY WORKER DECON		T		T		T																																	
CENTRAL TORR SCHOOL DISTRICT																																							
NORTHEASTERN SCHOOL DISTRICT																																							
BANOVER GENERAL HOSPITAL					T	T																																	
AMBULANCE SERVICES					T	T																																	

NOTES: Met Objective: T - Yes; N - No Objective 35: OR - Unannounced Exercise; AR - After Hours Exercise

1989 THREE HILL ISLAND EXERCISE
 GR XI-3 OBJECTIVES EVALUATED

Site/Activity	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	ON	AB		
CONNAGO TOWNSHIP	T	T	T	T	T	T						T				S	T		T																				
DOVER TOWNSHIP	T	T	T	T	T	T						T					T	T		T																			
N. MANCHESTER TOWNSHIP/MANCHESTER BOROUGH/MT. WOLF BOROUGH	T	T	T	T	T	T						T					T	T		T																			
FAIRVIEW TOWNSHIP	T	T	T	T	T	T						T					T	T		T																			
GOLDSBORO BOROUGH	T	T	T	T	T	T						T					T	T		T																			
BELLAM TOWNSHIP	T	T	T	T	T	T						T					T	T		T																			
LEWISBERRY BOROUGH	T	T	T	T	T	T						T					T	T		T																			
MANCHESTER TOWNSHIP	T	T	T	T	T	T						T					T	T		T																			
NEWBERRY TOWNSHIP	T	T	T	T	T	T						T					T	T		T																			
SPRINGTYSBURY TOWNSHIP	T	T	T	T	T	T						T					T	T		T																			
HARRINGTON TOWNSHIP	T	T	T	T	T	T						T					T	T																					
YORK BAYEN BOROUGH	T	T	T	T	T	T						T					T	T		T																			
ADAMS COUNTY																																							
COUNTY EOC	T	T	T																																				
RECEPTION/BASS CARE CENTERS				T	T																																		

NOTES: Met Objective: T = Yes; N = No Objective 16: ON = Unannounced Exercise; AB = After Hours Exercise

1999 THREE HILL ISLAND EXERCISE
 ON 11 OBJECTIVES EVALUATED

Site/Activity	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	08	09		
BARRS COUNTY																																							
COUNTY EOC	T	T		T																																			
RECEPTION/MASS CARE CENTERS				T		T																T	T																
FRANKLIN COUNTY																																							
COUNTY EOC	T	T		T																																			
RECEPTION/MASS CARE CENTERS				T		T																T	T																
NORTHAMBERLAND COUNTY																																							
COUNTY EOC	T	T		T																																			
RECEPTION/MASS CARE CENTERS				T		T																T	T																
SCHUYLKILL COUNTY																																							
COUNTY EOC	T	T																																					

NOTES: Met Objective: T = Top; N = No Objective; PR = Unannounced Exercise; AR = After Hours Exercise

1989 THREE HILL ISLAND EXERCISE
ON RI-3 OBJECTIVES EVALUATED

Site/Activity	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	DN	AE			
RECEPTION/MASS CARE CENTERS				T		T															T	T																	
SNYDER COUNTY																																							
COUNTY ROC	T	T		T																																			
MASS CARE CENTER				T		T															T	T																	
CHESTER COUNTY ROC																																							
COLUMBIA COUNTY ROC																																							
JUNIATA COUNTY ROC																																							
WIFFLIN COUNTY ROC																																							
FERRY COUNTY ROC																																							

NOTES: Met Objective T - Yes; F - No Objective 25 DN - Unannounced Exercise; AE - After Hours Exercise

III. SCENARIO

A. SUMMARY

The following is an abstract from the scenario developed by the General Public Utility Corporation to serve as the basis for response to a simulated radiological accident at the Three Mile Island Nuclear Station Unit #1, during the October 1989 full scale exercise.

INITIAL CONDITIONS

The Three Mile Island Nuclear Station is operating at 100% power with core burnup near the end of the fuel cycle. The MU-P-1B (Make Up & Purification Pump) has been out of service for 38 hours for high vibration, and remains uncoupled. The Radiological Instruments Building Fire Sprinkler Isolation Valve and the Air Intake fire protection systems are red tagged out of service in preparation for maintenance. The EF-P-1, Turbine Driven Emergency Feedwater Pump has been disassembled to enable repair to the turbine rotor.

SCENARIO

The exercise begins with a technician accidentally tripping the 'B' Main Feedwater Pump, initiating an automatic power reduction by the Integrated Control System. Following the pump reset, the plant is promptly stabilized, while power is returned to 100% in a controlled manner.

The incident stresses existing steam generator tube flaws, however, causing them to fail with a resulting Total Reactor Coolant System leakage at 100 gpm. This failure warrants a controlled plant shutdown (2% per minute) and the declaration of an Alert at approximately 1600 hours.

A plant cooldown is initiated following the plant shutdown. Before this is completed a cracked Circulating Water Pump causes the Circulating Water Pump House to fill with water, shorting out the associated electrical circuits resulting in the tripping of all six Circulating Water Pumps. The tripping of these pumps transfers the release pathway from the condenser offgas system directly to the atmosphere, and warrants the declaration of Site Area Emergency at approximately 1830 hours.

Reactor Coolant System leak rate continues to increase during the cooling of the plant, while several conditions occur in rapid succession, resulting in the total loss of reactor coolant system makeup capability and in the total

loss of steam generator feed. These conditions include the loss of such essential equipment as the 'C' Makeup and Purification Pump, 'B' Motor Driven Emergency Feedwater Pump, and the 'B' Decay Heat Removal Pump. As a consequence, the Reactor Coolant System to Steam Generator leakage increases to 1460 gpm, and further decreases the reactor coolant inventory.

These conditions lead to a breaching of the Reactor Coolant System and Containment. Plant conditions continue to decay, again escalating Reactor Coolant System leakage and, thereby, loss of coolant inventory, resulting in a breach to the fuel cladding. This breaching of the third fission barrier indicates an expected offsite release duration of five hours, warranting a declaration of General Emergency at approximately 2030 hours and appropriate protective action recommendations.

Onsite emergency responses lead to an eventual inventory recovery and cooling. Plant depressurization and decay heat removal effectively terminate the release. The release plume inventory includes radio iodine, and causes significant deposition of radioactive nuclides in the areas of Roundtop (Londonderry Township), Hershey (Derry Township) and Elizabethtown.

The Emergency Plume Phase of the exercise terminates at approximately 2215 hours, with plant personnel working to enter the Recovery mode by ensuring long term cooling. In support of the Ingestion Pathway and "Recovery, Reentry and Relocation" Phases, the plant will be considered to be in a cold shutdown status for the remainder of the exercise.

B. CHRONOLOGY OF EVENTS -- EMERGENCY PLUME PHASE

Projected Time		Actual Time
1600	Alert	1632
1830	Site Area Emergency	1842
	Siren Activation	1944
2030	General Emergency	2021
	Protective Action	2030
2300	Termination	2250

IV. EXERCISE RESULTS

A. PARTICIPANT EVALUATIONS

1. STATE LOCATIONS AND ORGANIZATIONS

STATE EOC

Objective 1, the ability to monitor, understand and use emergency classification levels (ECLs) was adequately demonstrated at the Pennsylvania State Emergency Operations Center (EOC) during the Emergency Plume Phase of the exercise.

Objective 2, the ability to fully alert, mobilize and activate personnel for both facility and field-based emergency functions was adequately demonstrated. All Operations Center staff as well as responding agency Emergency Preparedness Liaison Officers (EPLOs) were mobilized in an efficient and timely manner during the Emergency Plume Phase of the exercise. Staffing levels in the State EOC were also adequate for the Ingestion Pathway and "Recovery, Reentry and Relocation" Phases.

Objective 3, the ability to direct, coordinate and control emergency activities was adequately demonstrated. Overall, the emergency response was effectively managed by the Director of PEMA (first shift) and the PEMA Executive Officer (second shift) during the Emergency Plume Phase of the exercise. Staff members were well-informed regarding their responsibilities, often briefed on incident status, and appropriately consulted for decision making.

Some lack of direction and control was observed during the exercise, however, with regard to the implementation of the key agricultural protective action during the Emergency Plume Phase. At 1930 hours, the Pennsylvania Department of Agriculture issued an advisory for farmers in northwestern Lancaster County and extreme southern Dauphin County (living within five-miles of the nuclear station) to remove all farm animals from pastures and place them under shelter. The protective action also advised farmers within the 10-mile radius of Three Mile Island in all directions to protect feed and water supplies by covering them with plastic or canvas. (See Commonwealth of PA Emergency Management Agency(EMA) press release #4, issued at 1955 hours, and EIS log entry at 2018 hours.)

Unfortunately, this protective action was not effectively coordinated with all of the risk counties. The Agricultural Extension Agent in Dauphin County had contacted the State EOC at 1905 hours and questioned at that time whether sheltering of farm animals should be implemented in Dauphin County. Dauphin County message logs and status boards indicate that the County did not receive the 1955 press release. Furthermore, review of the County Agricultural Extension Agent's personal log, as well as direct questioning of the Agent, indicated that the State EOC did not answer the Agent's question as

of 2107, when the Agent contacted the State EOC a second time still seeking advice on whether to shelter livestock. No protective actions for livestock were implemented in Dauphin County until the county received the Commonwealth of PA #9 press release (officially issued at 2150 hours) at 2230 hours, advising farmers who live within the ten-mile radius of the plant "to put livestock, dairy cattle, and poultry under shelter, and to make provision for stored feed and water during the period of evacuation."

Lancaster County also did not receive the 1955 hours press release, or any direct notification from the State EOC with regard to protective actions for livestock prior to the County's reception of the 2150 hours press release. However, the County Agricultural Extension Agent did independently develop and implement precautionary protective actions for livestock at 1855 hours, as evidenced by the county's advisory to remove all livestock (out to ten miles from the plant) from pasture, communicated to all plume municipalities by 1916 hours.

Annex E to the Commonwealth Emergency Operation Plan (EOP) states that protective actions are to be coordinated through the State EOC (page E-11, paragraph 5.B.4). Annex E further states that emergency response relevant to agricultural matters are to "be coordinated through the State EOC by the Pennsylvania Department of Agriculture and the State Emergency Board..." (page E-13, paragraph 3.a). Coordination of protective actions can not be accomplished without their direct and timely communication to the risk county EOCs.

A second issue concerning direction and control at the State EOC has to do with the message syntax utilized to convey protective action decisions to the risk county EOCs. The message containing the evacuation protective action forwarded from the State EOC to the risk county EOCs via the dedicated line stated that the Governor "authorized a simulated evacuation out to 10 miles from TMI." The use of the word "authorized" caused some confusion at Dauphin County, where the EOC staff engaged in a discussion over whether the hotline message constituted an order or left the evacuation to County discretion. The confusion was eventually cleared up by a call from the County to the State EOC at 2045 hours, where the message was amended to read "the Governor orders an evacuation."

The content of the State EOC message to the risk counties regarding the ingestion of Potassium Iodide (KI) by emergency workers was also problematic. Both Dauphin County and Cumberland County were advised via the dedicated line that KI should be "issued" to emergency workers (at 2111 and 2110 hours, respectively), rather than "administered" or "ingested." The message vagueness resulted in confusion at the Cumberland County EOC and caused need for a call back by the County at 2127 hours for clarification.

In both cases confusion would have been avoided had a more definitive and standardized protective action message been conveyed over the dedicated line.

Objective 4, the ability to communicate with all appropriate locations, organizations, and field personnel, was adequately demonstrated. No significant communication failures were observed during the Emergency Plume Phase.

Communications with the participating county EOCs during the Ingestion Pathway Phase of the exercise were complicated by the fact that no direct link was established between the State EOC and Juniata or Mifflin Counties. Instead, the State EOC utilized the PEMA Area Office as a "go between" to these counties for communications. This lack of a direct link may have contributed to the fact that a key press release (titled "State Teams Monitor Radiation Levels") generated by PEMA during this exercise phase did not reach Mifflin County.

Communications were further complicated during the Ingestion Phase by use of the telefax as a primary communication means to the participating counties. The telefax was enhanced by use of a programmed, automated sequential call down of the 14 counties and two Area Offices. Despite this enhancement, fax messages were often delayed by 30 minutes for those locations near the bottom of the call down sequence. Message Control staff at the State EOC depended upon the machine message printout for verification of the reception of messages. Telefax machines do verify successful transmission of messages; they do not verify that the messages have been read. Given the fact of these unavoidable hard copy message delays, and the lack of a direct State link with two of the Ingestion Pathway counties, it is recommended that when key messages between the State EOC and the counties are transmitted primarily via telefax or teletype, they be accompanied by notice of their pending arrival through direct phone contact from either the Operations Center or Message Control with each intended destination.

Objective 5, the adequacy of facilities, equipment, displays and other materials to support emergency operations, was effectively demonstrated. In spite of ongoing renovations, the State EOC facilities adequately supported the emergency response functions demonstrated during the exercise. The Operations Center personnel continue to advance their abilities to manipulate and exploit the automated Emergency Information System, which significantly enhanced decision making processes and EOC briefings during all phases of the exercise.

Objective 11, the ability to make appropriate protective action decisions as applicable to State EOC responsibilities and functions, was adequately demonstrated during the Emergency Plume Phase of the exercise.

Objective 12, the ability to initially alert the public within the 10-mile EPZ and begin dissemination of an instructional message within 15 minutes of a decision by appropriate officials, was not adequately demonstrated. The decision to sound sirens and activate the Emergency Broadcast System (EBS) was made in the State EOC at 1930 hours. The message forwarded from the State EOC to the risk counties via the dedicated line indicated that sirens would be activated at 1944 hours, but did not specify an activation time for the EBS broadcast. As a consequence, Lancaster County did not begin dissemination of an EBS message until 1947 hours (see Objective #12 under the Lancaster County EOC).

Cumberland County delayed both its siren and EBS activation until 1957 hours, as evidenced by the County Exercise Events Log (see Objective #12, under Cumberland County EOC).

Dauphin County properly followed its procedures with regard to the initial alert and notification of the public, and attempted to begin the EBS broadcast immediately after siren activation at 1944 hours, but was frustrated by a technical/procedural problem on part of its lead EBS radio station, WHP. As a consequence, the EBS broadcast was not initiated until 2002 hours (see Objective #12 under Dauphin County EOC).

The manner in which the second sounding of sirens and activation of the EBS was conducted further illustrates a need for correction in State EOC procedures. The second decision to activate the sirens and EBS was made in the State EOC at 2036, and addressed the ten mile, 360 degree evacuation protective action made at 2030 hours. The siren and EBS activation message forwarded via the dedicated line to the risk counties failed to specify either a target time for sirens or the EBS broadcast. This message was not conveyed simultaneously to the counties in a conference call, but rather sequentially by several individually placed calls. As a consequence, the risk counties received this message at different times; furthermore, records indicate that Cumberland County never received the message to activate sirens or the EBS, and thus implemented the protective action without the siren alert desired by the State EOC.

NUREG-0654, FEMA-REP-1, REV. 1, Appendix 3, page 3-3, as well as FEMA-REP-10, page E-5, and Annex E to the Commonwealth of Pennsylvania Emergency Operations Plan, Appendix 3, pages 3-2 and 3-6, require the initial activation of sirens and the commencement of an instructional message for the public within 15 minutes of the decision by the appropriate State official. It is recommended that any directive from the State EOC to the risk counties regarding the initial alert and notification of the public include specific target times for both siren activation and the EBS broadcast. Ideally, the target time for the EBS broadcast will provide a buffer from the siren activation time, allowing residents a reasonable amount of time to get to their radios and tune in to the appropriate EBS station before the message begins.

Objective 13, the ability to coordinate the formulation and dissemination of accurate information and instructions to the public after the initial alert and notification has occurred, was adequately demonstrated by the State EOC. Public instructions addressing protective actions were accurately formulated by the State Public Information Officer (PIO) team, and reviewed by the PEMA Director prior to dissemination. One key advisory regarding protective actions for livestock, however, was not forwarded to two risk counties. (See Objective #3.)

Objective 14, the ability to brief the media in an accurate, coordinated, and timely manner, was adequately demonstrated. Numerous press releases were prepared by the State public information team and dispatched to the risk counties and Utility Media Center during the Emergency Plume Phase of the exercise. The satellite press briefing system was demonstrated during two live briefings, and adequately supported the fielding of press questions at both the Commonwealth Media Center and Utility Media Center.

Adequate press releases were also prepared during the Ingestion and Recovery, Reentry, and Relocation Phases, although one key release did not reach Mifflin County during the Ingestion Phase (see discussion under Objective #4 above).

Coordination and accuracy were lacking, however, with regard to certain press releases issued by the State EOC public information team. The Commonwealth News Release #1 (1808 hours) indicated that no radiation had been detected offsite as of the 6:00 PM plant status, and that the plant was operating at 68% capacity when the onsite leak was first detected. However, the GPU News Release #4 at 5:55 PM stated that "an offsite radiation monitor one-half mile east of the plant recorded an elevated radiation level of .2 millirems per hour," and also that the "plant had been operating at full power when an alert was declared at 4:32 PM today because of the reactor coolant leakage." No other Commonwealth press releases addressed the Utility's detection of an elevated radiation level offsite until Commonwealth News Release #7 was issued at 2110 hours, which discussed the later significant release that led to protective actions.

Although a detection of an elevated radiation level of .2 millirems per hour at only one monitor does not constitute a significant concern, the very fact of a public perception of reporting discrepancies could have significant impact on public confidence in State and local authorities in the stress-heightened environment of a radiation incident at Three Mile Island. Indeed, the local news media did question these discrepancies, as evidenced by discussion in an article in the October 19, 1989 issue of the **Lancaster Intelligencer Journal** titled "Officials Study Mock Disaster Results at TMI."

A second instance where coordination was lacking involved a press release developed by the State PIO team on 10/19/89, which contained an incorrect location for the Dauphin County farmer emergency worker reentry permit distribution point. The Commonwealth press release, titled "State Teams Monitor Radiation Levels," identified this distribution point as the Paxton Township Building at 78 Houcks Road in Paxton Township. Dauphin County contacted the State EOC and advised that the actual location was the United States Department of Agriculture (USDA) County Office located at 1451 Peters Mountain Road in Dauphin (see Annex E to the Dauphin County EOP, page E-15-2). The State Team did not follow up with a second press release advising farmers of this correction.

Objective 15, the ability to establish and operate rumor control in a coordinated and timely fashion, was adequately demonstrated in the State EOC for all exercise phases.

Objective 16, the ability to make the decision to recommend the use of KI by emergency workers was adequately demonstrated by the State Secretary of Health. However, actions on part of the Bureau of Radiation Protection (BRP) Incident Manager with regard to the ingestion of KI by BRP field teams clearly deviated from State plan prescriptions. The BRP Incident Manager independently made the decision to administer KI to BRP field team personnel at 2026, based upon dose projections and a sudden increase in release rates which indicated that the emergency worker PAGs could be exceeded. This decision was forwarded to the BRP field teams at 2029. However, the Secretary of Health did not issue this recommendation until 2055 hours. Annex E to the Commonwealth of Pennsylvania Emergency Operations Plan, Appendix 5, page 5-33, clearly charges the Secretary of the Department of Health with the authority to recommend the ingestion of KI for emergency workers. Although the BRP Incident Manager is qualified to advise the Secretary of Health on KI ingestion matters, it is the latter who should issue the recommendation in a coordinated manner with the assistance of PEMA.

Objective 26, the ability to identify the need for and call upon Federal and outside support agencies' assistance, was adequately demonstrated. Initial request for Federal support was demonstrated through the simulation of the activation of the Federal Radiological Monitoring Assistance Plan (FRMAP) by a direct (actual) call from BRP to the Department of Energy (DOE) during the Emergency Plume Phase of the exercise. Subsequent requests on part of the BRP and PEMA director indicated a thorough understanding of the resources available through the provisions of the FRERP.

INGESTION EXPOSURE PATHWAY

Objective 30, the ability to implement both preventative and emergency protective actions for Ingestion Pathway hazards, was adequately demonstrated. An effective ingestion hazard field sampling plan was formulated and implemented in a timely manner.

Protective actions addressing potential hazards from the ingestion of foods and water within the impacted areas (provided by the exercise scenario) were appropriately developed and implemented through the cooperation of PEMA, the PA Department of Agriculture, PA Department of Health, PA Department of Environmental Resources and the BRP. Ingestion Pathway protective actions demonstrated during the exercise included the removal of milk animals from pasture, the embargoing of milk and other agricultural products in those areas where contamination was suspected, the condemnation of milk located in areas where verified data indicated contamination levels in excess of emergency Protective Action Guidelines (PAGs), restrictions on water use from suspected and confirmed contaminated sources, and the delayed planting of winter wheat in suspected contaminated areas until adequate sampling data could be obtained and analyzed to identify the type and extent of soil contamination.

RECOVERY, REENTRY AND RELOCATION

Objective 32, the ability to determine the appropriate measures for controlled reentry and recovery based on estimated total population exposure, available Environmental Protection Agency (EPA) PAGs and other relevant factors, was adequately demonstrated. The BRP staff developed correct calculations to determine the potential exposure for the maximally exposed individual. The BRP evaluated the potential first, second and fifty-year exposure for the contaminated areas, and applied State guidelines in making recommendations for the plan being devised by the State for the return of evacuated residents.

One function central to reentry and recovery measures -- the establishment of restricted areas (areas suspected or confirmed to be impacted by deposition) -- was problematic and less than effective on part of the State EOC decision makers. Although the scenario did not allow time for the definitive identification of the exact extent and location of contaminated areas in the plume footprint, the aerial fly-over data provided to the State, as well as initial field sampling data provided to the BRP, did enable the reasonable determination of deposition location and intensity to support reentry and relocation measures. With the verified information provided, the BRP did correctly interpret deposition areas both below and above the Pennsylvania .5 REM per year relocation PAG.

The task of delineating these areas by highways and/or other man-made/natural boundaries was left to the PEMA Situation Analysis Group. This group did determine boundaries that included buffer zones for the plume deposition, and eventually forwarded narrative descriptions for restricted areas to the counties utilizing highways, local roads, water ways, and Legislative Routes. Descriptions for the restricted areas around the Round Top and Hershey deposition were forwarded to the counties at 1306 hours on 10/19/89, while the boundaries for the Elizabethtown restricted area were forwarded at 1330 hours on the same date.

The end product of this delineation process was problematic. The boundaries identified by the Situation Analysis Group for the Elizabethtown restricted area exceeded the 10-mile EPZ and encompassed parts of Lancaster County not evacuated during the Emergency Plume Phase, where, according to County estimates, approximately 11,000 residents were located. The establishment of a restricted area outside of the evacuated areas should have involved controlled relocation efforts and extensive coordination between the County and State EOC. However, no mention of, or exercise play addressing the 11,000 residents inside the restricted area was made until a conference call hosted by the State EOC at 1300 hours on 10/20/89. PEMA first became aware of the fact that the boundaries extended beyond the evacuated zone during this conversation when the Lancaster County Emergency Management Coordinator (EMC) raised the question of the residents still located within the restricted area.

Both Dauphin County and Lancaster County found it necessary to translate the Legislative Routes used in the State EOC description of restricted areas into road names which are more familiar to the county and municipal staffs, and personnel manning ACPs. Additionally, Lancaster County found the graphs faxed by the State EOC depicting the potential deposition areas to be unclear and inconsistent. (See Objective #33 under the Lancaster County EOC.)

Objective 33, the ability to implement appropriate measures for controlled reentry and recovery, was adequately demonstrated. A thorough access control plan was generated by the Pennsylvania State Police and National Guard, with the assistance of the PA DOT for the prolonged security of the restricted areas. BRP recommended thorough and appropriate occupancy guidelines (stay times) for residents that would be allowed to reenter the Elizabethtown restricted zone (exceeding the .5 REM per year relocation PAG), as well other guidelines for residents resettling the deposition areas not exceeding the relocation PAG.

The experience of developing a resettlement plan during the exercise for the return of the evacuated population to the uncontaminated areas in the 10-mile EPZ, revealed a need to modify existing emergency plans at both the State and county levels. A great extent of effort on part of the State EOC staff was dedicated to the resettlement of the uncontaminated West Shore area, and partially centered on the determination of an optimum staging or geographical sequencing of the return of residents. However, a disproportionate amount of discussion focussed on such details as the priorities for the re-establishment of vital services (police, fire, first aid), critical industries (electric, sewage, service stations, food stores, etc.) and institutions (hospitals, nursing homes, schools, and banks). Such details as the re-establishment of vital services, industries and institutions for habitable areas are not situational or contingent upon the location and extent of deposition, and should be pre-established as set plan procedures. The development of these

procedures in advance will allow more time for critical decision-making, such as the decontamination of areas impacted by deposition and the support of residents who are to be displaced for a long term.

Some confusion was observed on part of PEMA staff members during the exercise with regard to the application of the Pennsylvania relocation PAG to the areas impacted by plume deposition. During a briefing on 10/20/89 the BRP advised PEMA that the Elizabethtown restricted zone was in excess of the .5 REM per year PAG, and that the Hershey and Roundtop depositions did not exceed this PAG and could be resettled immediately. However, the PEMA staff members misinterpreted these BRP findings, and in response dedicated a substantial amount of time and effort (including the advisement of the counties) generating resources for the long term relocation of 50,000 residents from all three deposition areas. Relocation was only necessary for the 18,000 residents displaced from the Elizabethtown restricted area. Although this confusion was corrected at the final briefing of the exercise by BRP personnel, the incident still suggests a need for closer coordination between Operations and Technical Support during Recovery, Reentry and Relocation decision making. It is recommended that EIS printouts be provided to the BRP staff periodically for their review and consultation during all phases of the exercise.

Objective 34, the ability to maintain staffing on a continuous 24-hour basis by an actual shift change, was adequately demonstrated for all State EOC staff positions. The shift change was managed efficiently and included thorough briefings for the arriving staff members on the status of the incident. Response effectiveness was not impacted by staff replacement.

Objective 35, the ability to coordinate the evacuation of onsite personnel, was not demonstrated during the exercise. Although personnel at the Emergency Operations Facility (EOF) were aware of the simulated onsite evacuation, no exercise play was observed addressing the evacuation of onsite personnel at either the State EOC or Dauphin County EOC. No message copies, logs, or EIS entries refer to the coordination of this evacuation between the State EOC and the Utility.

ACCIDENT ASSESSMENT (PA BUREAU OF RADIATION PROTECTION)

Objective 1, the ability to monitor, understand and use emergency classification levels as a basis for appropriate action, was adequately demonstrated by the Bureau of Radiation Protection (BRP).

Objective 2, the ability to fully alert, mobilize and activate personnel for both facility and field-based emergency functions, was adequately demonstrated by the BRP during all phases of the exercise.

Objective 3, the ability to direct, coordinate and control emergency activities, was adequately demonstrated as applicable to BRP responsibilities during all phases of the exercise.

Objective 4, the ability to communicate with all appropriate locations, organizations, and field personnel, was adequately demonstrated. However, communications were problematic with the RAD-10 BRP field team, which experienced transmission problems when attempting to reach BRP Headquarters while using its mobile unit. The problem was resolved during the exercise when the team switched to the Allendale repeater. (See Objective # 4 under Field Monitoring Teams.)

Objective 5, the adequacy of facilities, equipment, displays, and other materials to support emergency operations, was effectively demonstrated for BRP functions at the Fulton Building. It was observed, however, that the BRP did not utilize its acetate overlay or any substitute device to provide a graphic depiction of the plume during discussions and decision making-processes. It is recommended that the BRP acquire and utilize one of the available computer modeling programs (such as the Interactive Rapid Dose Assessment Model (IRDAM) package) that will serve to enhance graphic display of the plume, and better support the analysis of an elevated release, the latter being a limitation of the spreadsheet program currently employed by the BRP.

Objective 10, the ability, within the plume exposure pathway, to project dosage to the public via plume exposure, based on plant and field data, was adequately demonstrated by the BRP.

Objective 11, the ability to make appropriate protective action decisions, based on projected or actual dosage, EPA PAGs, availability of adequate shelter, evacuation time estimates, and other relevant factors, was adequately demonstrated.

INGESTION EXPOSURE PATHWAY

Objective 29, the ability to project dosage to the public for Ingestion Pathway exposure and determine appropriate protective measures based on field data, Food and Drug Administration (FDA) PAGs and other relevant factors, was adequately demonstrated. Projections of areas of concern were verified by field measurements.

Radionuclide build-up in milk was considered during the decision-making process for the dairy industry. Protective action recommendations for the condemnation of food were based on actual measurements in the food, while projected doses based on laboratory measurements were correctly compared with FDA PAGs.

Objective 34, the ability to maintain staffing on a continuous 24-hour basis by an actual shift change, was adequately demonstrated by the BRP.

EMERGENCY OPERATIONS FACILITY

Objective 1, the ability to monitor, understand and use emergency classification levels (ECL) through the appropriate implementation of emergency functions and activities corresponding to the ECLs as required by the scenario, was adequately demonstrated at the Emergency Operations Facility (EOF).

Objective 2, the ability to fully alert, mobilize and activate personnel for both facility and field-based emergency functions was adequately demonstrated. The EOF was appropriately staffed by DER/BRP personnel as specified in the Plan (Annex E, Pennsylvania Radiological Emergency Response to Nuclear Power Plant Incidents)

Objective 4, the ability to communicate with all appropriate locations, organizations, and field personnel was adequately demonstrated as applicable to the EOF.

Objective 5, the adequacy of facilities, equipment, displays and other materials to support emergency operations, was effectively demonstrated. The Textronic computer was inoperable for most of the exercise due to a problem with the phone link. This did not inhibit emergency response, however, as information on the plant was successfully obtained via phone and copied onto data forms.

Displays in the EOF were limited. Maps showing evacuation routes and relocation centers were not posted; protective action recommendations were not recorded on status boards. Although the absence of these displays did not hamper emergency response during the exercise, their provision is recommended for the enhancement of decision-making by the EOF staff.

FIELD MONITORING TEAMS (PA BUREAU OF RADIATION PROTECTION - (BRP))

Objective 2, the ability to fully alert, mobilize and activate personnel for both facility and field-based emergency functions, was adequately demonstrated. All members of the RAD 5 and RAD 10 Teams were activated, mobilized and deployed in a timely manner.

Objective 4, the ability to communicate with all appropriate locations, organizations, and field personnel was adequately demonstrated. However, communication interruptions were caused by

the periodic inability of the RAD 10 Team to transmit to the Fulton Building by use of its mobile radio unit. (The team experienced no problems receiving transmissions from the Fulton Building.) Transmission failures resulted in communication delays averaging 15 to 18 minutes. The transmission problems were eventually corrected when the team switched to the Allendale repeater. (Direct transmissions and use of the Big Flat repeater were ineffective.)

Objective 6, the ability to continuously monitor and control emergency worker exposure, was adequately demonstrated.

Objective 7, the appropriate equipment and procedures for determining field radiation measurements, were adequately demonstrated by both participating BRP field teams.

Objective 8, the appropriate equipment and procedures for the measurement of airborne radiiodine concentrations as low as 10⁻⁷ microcuries per cc in the presence of noble gases, were adequately demonstrated. Both participating BRP field teams properly followed BRP implementing procedures for plume verification, air sampling, and field sample analysis.

The BRP RAD 10 Team did experience equipment problems with their SAM II dual channel analyzer (SN # 532). The power cable for the instrument proved faulty and unreliable, while the instrument itself provided readings/counts that were too high. This instrument should be repaired. In the future, the SAM II instrument should be tested and iodine settings should be determined prior to team deployment.

Although not required, the provision of preprinted labels to be affixed to the bagged air sampling media in the field will help to assure that the correct and required information is included with samples for their submission to the lab.

Objective 9, the ability to obtain samples of particulate activity in the airborne plume and promptly perform laboratory analyses, was adequately demonstrated. The RAD 10 Team experienced some difficulty at first when performing particulate filter field estimates. The team was not successful in obtaining an estimate following the GM method (see BRP Implementing Procedure 102, page 11). The instructions for the alternate Stabilized Assay Meter (SAM) method contained in BRP Implementing Procedure 102, Section VII, A, (page 10) state that Window and Threshold settings do not matter. However, the field team was unable to obtain a sample count until the Window was placed out. Procedure step VII. A. 1. (e) should be revised so as to instruct the Team to set the Window "out."

WATER SAMPLING TEAMS (PA DEPARTMENT OF ENVIRONMENTAL RESOURCES - (DER))

Objective 4, the ability to communicate with all appropriate locations, organizations, and field personnel, was adequately

demonstrated. The DER Sampling Team had excellent communications systems. Both the primary, multi-channel radio and the backup, cellular telephone were demonstrated during the Ingestion Phase of the exercise.

Objective 6, the ability to continuously monitor and control emergency worker exposure, was adequately demonstrated by the DER Water Sampling Team. Team members were very knowledgeable about radiological exposure control procedures, and took extensive measures to minimize exposure.

Objective 27, the appropriate use of equipment and procedures for collection and transport of water samples, was adequately demonstrated.

AGRICULTURAL SAMPLING TEAMS (PA DEPARTMENT OF AGRICULTURE - (DOA))

Objective 4, the ability to communicate with all appropriate locations, organizations, and field personnel, was adequately demonstrated by the evaluated Agricultural Sampling Teams.

Objective 6, the ability to continuously monitor and control emergency worker exposure, was adequately demonstrated by the Agricultural Sampling Teams. Radiological exposure control was especially enhanced by the support provided by the inclusion of a DER representative on the PA DOA Team.

Objective 27, the appropriate use of equipment and procedures for collection and transport of samples of vegetation, food crops, meat, poultry, and animal feeds (indigenous to the area and stored) was adequately demonstrated. Milk and silage samples from three locations were properly obtained and controlled by the PA DOA team. Fifteen additional teams comprising members from the local County Agricultural Stabilization and Conservation Services (ASCS) were also mobilized. The Dauphin County team was evaluated in addition to the PA DOA team, and successfully demonstrated procedures for the sampling of stored animal feed.

One problem concerning the transport and control of the samples obtained by the fifteen ASCS teams during the exercise had to do with the directive issued from the State EOC instructing the teams to deliver the samples to their respective County EOC (see the 1355 Teletype message on 10/19/85). The County EOCs are not equipped or prepared to accept contaminated samples, and can do little with them other than forward them to the lab. During the exercise, EOC staffs of the counties located closest to the restricted areas (including Dauphin, Lancaster and York) expressed concerns over the possible and unnecessary contamination of their facility when informed of the pending arrival of the samples. Field samples should either be delivered directly to a lab, or to specially designated collection points supported by appropriate personnel and equipment to assure monitoring and containment of any contamination.

LAB (PA BUREAU OF LABORATORIES)

Objective 4, the ability to communicate with all appropriate locations, organizations, and field personnel, was adequately demonstrated by the DER Laboratory. The Lab's primary link to the BRP Accident Assessment Group was supported by radio, telefax, and commercial phone.

Objective 9, the ability to perform laboratory analyses on samples of particulate activity obtained from the airborne plume, was adequately demonstrated by the DER Laboratory.

Objective 28, appropriate lab operations and procedures for measuring and analyzing samples of vegetation, food crops, milk, poultry, water and animal feeds (indigenous to the area and stored), were adequately demonstrated. However, direction and guidance were lacking with regard to the optimal prioritization of sample analyses. The order in which the Lab conducted analyses of the delivered samples was determined solely upon the basis of how "hot" they were, i.e., samples providing the highest readings when monitored upon their arrival were prioritized over samples giving lower readings. Commodity type, however, is also an important factor in the determination of a sample analysis priority. FEMA REP-12, "Guidance on Offsite Emergency Radiation Measurement Systems, Phase 2 -- The Milk Pathway," (page 2-2) identifies milk as the most critical food of the Ingestion Pathway with regard to potential radiation exposure. This concept is further supported by WINCO-1012, "Guidance on Offsite Emergency Radiation Measurements Systems, Phase 3 -- Water and Non-Dairy Food Pathway," (page v) which states that "The monitoring and controlling of fresh milk is the primary concern for the ingestion pathway" Annex E to the Commonwealth EOP also indicates the prioritization of milk over other agricultural commodities given the amplification and perishability factors involved (Appendix 6, page E-6-19). Annex E charges the Bureau of Radiation Protection with the responsibility to set analytic priorities (Appendix 6, page E-6-25).

The GM survey meter used by the Lab for contamination control purposes was last calibrated 7/17/86. Although Annex E to the Commonwealth EOP (Appendix 6, page E-6-14) states that these meters are to be calibrated in intervals recommended by the manufacturer, FEMA REP-2, REV. 1, "Guidance on Offsite Emergency Radiation Measurement Systems, Phase 1 -- Airborne Release," (page 6-2) advises that instrument calibration be done annually.

STATE TRAFFIC AND ACCESS CONTROL

Objective 2, the ability to fully alert, mobilize and activate personnel for both facility and field-based emergency functions, was adequately demonstrated by the Pennsylvania State Police (PSP).

Objective 4, the ability to communicate with all appropriate locations, organizations, and field personnel, was adequately demonstrated.

Objective 6, the ability to continuously monitor and control emergency worker exposure, was adequately demonstrated by the PSP personnel.

Objective 20, the organizational ability and resources necessary to control evacuation traffic flow and to control access to evacuated and sheltered areas, was adequately demonstrated as applicable to designated State responsibilities. However, no actions on part of the State EOC to restrict or control access to the Susquehanna River were observed, or are evidenced by any EIS or message log entries for 10/17/89. Annex E to the Commonwealth EOP, Appendix 20, pages E-20-2 through E-20-5, directs that the State EOC will contact the Pennsylvania Fish Commission to activate river Access Control Points (ACPs) (as necessary) during an incident at Three Mile Island.

JOINT (UTILITY) MEDIA CENTER

Objective 1, the ability to monitor, understand and use emergency classification levels, was adequately demonstrated.

Objective 2, the ability to fully alert, mobilize and activate personnel for emergency functions at the Joint (Utility) Media Center was adequately demonstrated.

Objective 3, the ability to direct, coordinate and control emergency activities, was adequately demonstrated.

Objective 4, the ability to communicate with all appropriate locations, organizations and field personnel, was adequately demonstrated.

Objective 5, the adequacy of facilities, equipment, and displays to support emergency operations, was effectively demonstrated. However, no maps or status boards were utilized during the exercise. Such displays greatly enhance the briefing of the media as well as the understanding of incident status by the Media Center staff, and should be utilized in future exercises. (The Utility is in the process of moving the Media Center to a new facility, which will be available for the next exercise.)

Objective 14, the ability to brief the media in an accurate, coordinated and timely manner, was adequately demonstrated. The Utility and State conducted four joint news briefings. All briefings were timely, conducted well, and free of technical jargon. Approximately 20 journalism students as well as personnel from two TV stations were present at the Utility Media Center to ask questions during the exercise. (The content of certain press releases issued by the Utility Media Center were inconsistent with the information

contained in Commonwealth news releases. See Objective #14 under the State EOC.)

Objective 15, the ability to establish and operate rumor control in a coordinated and timely fashion, was adequately demonstrated at the Joint (Utility) Media Center.

Objective 34, the ability to maintain staffing on a continuous 24-hour basis by an actual shift change, was adequately demonstrated.

2. RISK COUNTIES, SCHOOL DISTRICTS, AND MUNICIPALITIES

CUMBERLAND COUNTY

CUMBERLAND COUNTY EOC

Objective 1, the ability to monitor, understand and use emergency classification levels (ECLs) was adequately demonstrated.

Objective 2, the ability to fully alert, mobilize and activate personnel for both facility and field-based emergency functions was adequately demonstrated. The EOC was fully operational by 1715 hours.

Objective 3, the ability to direct, coordinate and control emergency activities was adequately demonstrated. The County Director of Emergency Services was firmly in charge of operations at the EOC. Periodic and thorough briefings were conducted, while plans and check lists were reviewed frequently to assure the accomplishment of response tasks.

Objective 4, the ability to communicate with all appropriate locations, organizations, and field personnel, was adequately demonstrated. However, the fact that the County EOC was remote from the Communications Center (located approximately three miles away) complicated response operations. The conveying of messages from the EOC over the dedicated line and the various County radio nets (EMA, FIRE, EMS) required an additional call over a commercial line. This fact contributed to a key issue regarding the initial public alert and notification (see Objective #12). The County EMC reports that this arrangement is temporary, and that the Communications Center and the EOC will be reunited by the end of the year.

Objective 5, the adequacy of facilities, equipment, displays and other materials to support emergency operations was effectively demonstrated.

Objective 6, the ability to continuously monitor and control emergency worker exposure, was adequately demonstrated. Related procedures were thoroughly and properly explained by the County Radiological Officer. An inspection of dosimetry stored at the County for distribution to field workers and risk municipalities revealed that supplies were adequate according to plan prescriptions.

Objective 12, the ability to initially alert the public within the 10-mile EPZ and begin dissemination of an instructional message within 15 minutes of a decision by appropriate officials, was not adequately demonstrated by the County. At 1934 hours the County Communications Center received the message from the State EOC to sound sirens at 1944 hours and activate the EBS (with no target time specified). The County's exercise status log indicates that both sirens and the EBS broadcast were initiated at 1952 hours. The time

delay (which exceeds the 15 minute time limit from the 1930 hours decision made at the State EOC) was due in part to the fact that the dedicated line and Fire Radio Net (used to advise the route alert teams) are not located in the EOC. Case in point, the EMC did not receive the State's message from the County Communications Center until 1938, constituting an additional delay of 4 minutes. The necessity for an additional phone call to the Communications Center also increased the time required to confirm notification of the risk municipalities and route alert teams. (See Objective # 12, under the State EOC.)

Objective 13, the ability to coordinate the formulation and dissemination of accurate information and instructions to the public after the initial alert and notification has occurred, was adequately demonstrated.

Objective 14, the ability to brief the media in an accurate, coordinated, and timely manner, was adequately demonstrated. Demonstration of this objective included an actual interview of the EMC by a local PBS station, arranged by the County PIO with the permission of the County Commissioners.

Objective 15, the ability to establish and operate rumor control in a coordinated and timely fashion, was adequately demonstrated. The County rumor control line was established in the Communications Center and announced to the public. The line was manned by Communications Center staff under the direction of the County PIO.

Objective 16, the ability to make the decision to recommend the use of KI by emergency workers was adequately demonstrated as applicable to County responsibilities.

Objective 18, the ability and resources necessary to implement appropriate protective actions for the impacted permanent and transient plume EPZ population (including transit-dependent persons, special needs populations, handicapped persons and institutionalized persons) was adequately demonstrated by the County EOC.

INGESTION EXPOSURE PATHWAY

Objective 30, the ability to implement both preventative and emergency protective actions for Ingestion Pathway hazards, was adequately demonstrated. The County Emergency Board had the following information available to support the County's response to Ingestion Pathway Hazards: (1) food, feed, and seed facility listings, (2) addresses and phone numbers of farms and food storage/distribution/processing centers, and (3) information on local crop production and acreage. The County did not receive any applicable or specific protective actions during the Ingestion Pathway Phase of the exercise. However, participating staff members did exhibit a thorough knowledge of the Ingestion Pathway as applicable to those areas in Cumberland County within the 50 mile

planning zone for Three Mile Island, via briefings and discussions in the EOC and with the County Emergency Board.

RECOVERY, REENTRY AND RELOCATION

Objective 33, the ability to implement appropriate measures for controlled reentry and recovery, was adequately demonstrated. The EMC and staff discussed at length what measures were required for the resettlement of the evacuated areas, and coordinated these efforts with PEMA. Through this discussion and coordination, the County EOC established three priority items for the controlled return of residents: (1) the reestablishment of municipal EOCs and vital services, (2) return of persons housed at mass care centers, and (3) return of the general population.

Objective 34, the ability to maintain staffing on a continuous 24-hour basis by an actual shift change, was adequately demonstrated.

CUMBERLAND COUNTY RECEPTION AND MASS CARE CENTERS

Objective 4, the ability to communicate with all appropriate locations, organizations and field personnel was adequately demonstrated at both the reception and mass care centers.

Objective 6, the ability to continuously monitor and control emergency worker exposure was adequately demonstrated by the radiological monitoring team at the mass care center.

Objective 21, the procedures, facilities, equipment and personnel for the registration, radiological monitoring and decontamination of evacuees was adequately demonstrated.

Objective 22, the adequacy of facilities, equipment and personnel for congregate care of evacuees was adequately demonstrated at the Big Spring High School.

CUMBERLAND COUNTY EMERGENCY WORKER DECONTAMINATION STATION

Objective 2, the ability to fully alert, mobilize and activate personnel for both facility and field-based emergency functions was adequately demonstrated. The emergency worker decon station at the Lemoyne Fire Company was promptly set up and well staffed.

Objective 4, the ability to communicate with all appropriate locations, organizations, and field personnel was adequately demonstrated. Numerous communication systems were available at the decon station.

Objective 6, the ability to continuously monitor and control emergency worker exposure was adequately demonstrated.

Objective 25, the facilities, equipment, supplies, procedures and personnel for decontamination of emergency workers, equipment and vehicles was adequately demonstrated. Decon station personnel were well trained, knowledgeable of procedures, used good techniques and equipment, and kept adequate records.

The CD 700 survey instruments used for monitoring workers and vehicles were calibrated only as recently as August of 1986. Although Annex E to the Commonwealth EOP (Appendix 6, page E-6-14) directs that these meters will be calibrated at the frequency suggested by the manufacturer, FEMA REP-2, REV. 1, "Guidance on Offsite Emergency Radiation Measurement Systems, Phase 1 -- Airborne Release," (page 6-2) advises that instrument calibration be done annually.

WEST SHORE SCHOOL DISTRICT

Objective 19, the ability and resources necessary to implement appropriate protective actions for school children within the plume EPZ, was adequately demonstrated. Alert and notification was received by the District, which in turn notified its schools. School procedures were demonstrated at Newberry School, whose principal was very knowledgeable of required procedures. Emergency plans were in place and specific operational procedures for the school were available. Actual contact was made for the provision of necessary transportation. Interviewing of the Transportation Supervisor revealed that adequate transportation would be available for the student body and staff.

LOWER ALLEN TOWNSHIP EOC

Objective 1, the ability to monitor, understand and use emergency classification levels (ECLs) through the appropriate implementation of emergency functions and activities corresponding to ECLs, was adequately demonstrated.

Objective 2, the ability to fully alert, mobilize and activate personnel for both facility and field-based emergency functions was adequately demonstrated.

Objective 3, the ability to direct, coordinate and control emergency activities was adequately demonstrated. The EMC did an excellent job in managing the activities of the staff. Periodic briefings were given, while good records and message logs were maintained throughout the exercise. Staff members all appeared to be well trained and functioned very effectively.

Objective 4, the ability to communicate with all appropriate locations, organizations, and field personnel was adequately demonstrated.

Objective 5, facilities, equipment, displays and other materials to support emergency operations was adequately demonstrated.

Objective 6, the ability to continuously monitor and control emergency worker exposure was adequately demonstrated.

Objective 12, the ability to initially alert the public within the 10-mile EPZ and begin dissemination of an instructional message within 15 minutes of a decision by appropriate State and/or local officials, was adequately demonstrated as applicable to municipal responsibilities.

Objective 16, the ability to make the decision to recommend the use of KI to emergency workers based on predetermined criteria as well as to distribute and administer it once the decision is made, was adequately demonstrated as applicable to municipal responsibilities.

Objective 18, the ability and resources necessary to implement appropriate protective actions for the impacted permanent and transient plume EPZ population, was adequately demonstrated.

Objective 20, the organizational ability and resources necessary to control evacuation traffic flow and to control access to evacuated and sheltered areas was adequately demonstrated.

NEW CUMBERLAND BOROUGH

Objective 1, the ability to monitor, understand and use emergency classification levels (ECLs) through the appropriate implementation of emergency functions and activities corresponding to ECLs, was adequately demonstrated.

Objective 2, the ability to fully alert, mobilize and activate personnel for both facility and field-based emergency functions was adequately demonstrated.

Objective 3, the ability to direct, coordinate and control emergency activities was adequately demonstrated.

Objective 4, the ability to communicate with all appropriate locations, organizations, and field personnel was adequately demonstrated.

Objective 5, facilities, equipment, displays and other materials to support emergency operations was adequately demonstrated.

Objective 6, the ability to continuously monitor and control emergency worker exposure was adequately demonstrated.

Objective 12, the ability to initially alert the public within the 10-mile EPZ and begin dissemination of an instructional message within 15 minutes of a decision by appropriate State and/or local officials, was adequately demonstrated as applicable to municipal responsibilities.

Objective 16, the ability to make the decision to recommend the use of KI to emergency workers based on predetermined criteria as well as to distribute and administer it once the decision is made, was adequately demonstrated as applicable to municipal responsibilities.

Objective 18, the ability and resources necessary to implement appropriate protective actions for the impacted permanent and transient plume EPZ population, was adequately demonstrated.

Objective 20, the organizational ability and resources necessary to control evacuation traffic flow and to control access to evacuated and sheltered areas was adequately demonstrated.

DAUPHIN COUNTY

DAUPHIN COUNTY EOC

Objective 1, the ability to monitor, understand and use emergency classification levels (ECLs) was adequately demonstrated. Each classification declaration was promptly posted and announced for the benefit of the entire EOC staff. Upon reception of the Site Area and General Emergency declarations from the Utility, municipal notifications of the ECLs were completed and verified by the County Communications Center via the Emergency Management Agency (EMA) radio net within ten minutes.

Objective 2, the ability to fully alert, mobilize and activate personnel for both facility and field-based emergency functions was adequately demonstrated. The EOC was fully staffed with plan designated personnel. Prompt notification and activation of staff members were enhanced by use of a computerized recall system with a taped message requiring notified personnel and agencies to verify successful contact by calling back the EOC.

Objective 3, the ability to direct, coordinate and control emergency activities was adequately demonstrated. Both the EMC and Deputy EMC effectively managed the EOC staff and coordinated County response through all phases of the exercise. EOC personnel were often briefed on incident status and consulted during decision-making processes.

Some room for improvement in the control of County operations was observed, however, with regard to the use of the dedicated line linking the County with the State EOC and the Utility. As many as five different personnel of varying authority in the EOC answered this line and received key messages during the exercise. Not all messages were immediately recorded on message forms, while some messages were recorded with minor inaccuracies. (Case in point, the declaration time for the Site Area escalation was originally recorded as the time the message was received in the EOC.)

It is recommended that the protocol for the dedicated line in the EOC be reviewed and modified to improve message accuracy. Should the County continue to allow numerous personnel to answer the dedicated line, it is recommended that control of key messages be enhanced by utilizing an additional message log to be placed at the dedicated line phone.

Objective 4, the ability to communicate with all appropriate locations, organizations, and field personnel, was adequately demonstrated. Numerous communication systems were available to the County staff in the EOC and County Dispatch Center. Use of the RACES and PEMA EM Net 898 radio was especially effective. Problems with the dedicated line were periodically experienced when attempting to make outgoing calls to the Utility and State EOC. Backup systems were effectively used at these times, however, so that the periodic

failure of the dedicated line for outgoing calls did not negatively impact County response.

Objective 5, the adequacy of facilities, equipment, displays and other materials to support emergency operations was effectively demonstrated.

Objective 6, the ability to continuously monitor and control emergency worker exposure, was adequately demonstrated. Visual inspection of County dosimetry/KI supplies revealed that adequate quantities were available for field workers. Issuance of these materials to emergency workers was simulated, but the accompanying EOC briefing on emergency worker exposure control conducted by the County Rad Officer indicated that workers would generally be prepared to use dosimetry and keep their exposure within the 25 REM PAG. However, further questioning of the Rad Officer revealed some lack of familiarity with County plan prescriptions. The Rad Officer was not aware of the County emergency exposure control procedure which dictates that the County EMC must authorize exposures in excess of 5 REM (whole body) after certain conditions are met. (See Annex E to the County EOP, Appendix 13, pages E-13-32 to 33.)

Procedures for distribution of dosimetry and KI to farmers and other personnel authorized to enter the restricted areas were also adequately demonstrated during the Ingestion Phase of the exercise.

Objective 12, the ability to initially alert the public within the 10-mile EP2 and begin dissemination of an instructional message within 15 minutes of a decision by appropriate officials, was not adequately demonstrated. The County received a message from the State EOC at 1932 hours to activate sirens at 1944 hours and begin broadcast of an EBS message. (The State message did not specify a target time for the EBS activation.) The County EOC promptly notified the municipalities and prepared the appropriate EBS message. The Deputy EMC also contacted the lead EBS station, WHP, and conducted a successful radio test in preparation for a live broadcast from the EOC. Immediately after the activation of sirens at 1944 hours, the contact person at WHP gave the County the go ahead for the live transmission of the EBS message. As per plan prescriptions, the President of the Dauphin County Board of Commissioners then read the prepared message over the EBS radio link in the EOC. However, shortly after the Commissioner concluded the transmission, the WHP contact person informed the County that the EBS transmission had not been broadcasted because of some technical problem. The Deputy EMC attempted to arrange an immediate follow up transmission, but a second, successful broadcast could be not initiated until 2002 hours.

A few days after the exercise, Region III contacted WHP and questioned the station management about the EBS broadcast problem. This questioning revealed that the technician coordinating the County broadcast at the station during the exercise incorrectly assumed the County was utilizing a two-tone generator for its transmission. This

error mandated a manual "patch-in" (by phone from the County) for the second and successful broadcast of the message. The WHP station management stated that a more definitive transmission format could be established with the existing equipment that would guarantee prompt EBS broadcasts in the future. (See Objective #12 under the State EOC.)

Objective 13, the ability to coordinate the formulation and dissemination of accurate information and instructions to the public after the initial alert and notification has occurred, was adequately demonstrated by the County EOC for all phases of the exercise.

Objective 14, the ability to brief the media in an accurate, coordinated, and timely manner, was adequately demonstrated. One simulated press briefing was demonstrated at 2110 hours, and supported with accurate and thorough information collected by the PIO on the status of the incident and response by the County. The County PIO also assured that this briefing was coordinated with State public information processes by directly informing the State EOC and Utility Media Center of the briefing and inviting their participation.

Objective 15, the ability to establish and operate rumor control in a coordinated and timely fashion, was adequately demonstrated. Three rumor control lines were promptly established and properly monitored by the County PIO and two additional staff members.

Objective 16, the ability to make the decision to recommend the use of KI by emergency workers was adequately demonstrated by the County EOC. County KI supplies were visually inspected and found to be adequate in quantity. The County properly awaited authorization from the State Secretary of Health (which arrived at 2111 hours) before directing emergency workers to ingest KI at 2129 hours.

Objective 18, the ability and resources necessary to implement appropriate protective actions for the impacted permanent and transient plume EPZ population (including transit-dependent persons, special needs populations, handicapped persons and institutionalized persons) was adequately demonstrated. The County EOC Transportation Coordinator confirmed the transport needs of the municipalities and verified the availability of busses and ambulances by actual phone contacts with the various bus companies and ambulance services. The County Medical Services Officers contacted the risk nursing homes and hospitals to confirm client census and transportation (ambulances) needs.

Confirmation of the transport needs of the nursing homes and hospitals by the Medical Services Officers, and verification of available ambulances by the Transportation Coordinator, indicated an unmet need of 98 ambulances in the County during the exercise. This number was unexpected and far exceeds the potential unmet ambulance needs indicated in the County plan. (The State EOC could not fulfill

this unmet need prior to the termination of the exercise.) Sixty-three of these ambulances were requested by the Dauphin Manor, while Annex E to the County EOP (Appendix 7, page 7-10) indicates that no ambulances would be needed for the transport of the Manor's 521 clients. The ambulance requirements listed in the County plan should be formally reviewed, confirmed, and amended as needed. Additional sources of ambulances, if necessary, should be identified and listed in Appendix 7.

INGESTION EXPOSURE PATHWAY

Objective 30, the ability to implement both preventative and emergency protective actions for Ingestion Pathway hazards, was adequately demonstrated. The EMC capably managed Ingestion Pathway related matters in the County. The County Agricultural Agent ensured the proper issuance and verification of farmer emergency worker reentry permits and also provided computer lists of dairy farms, meat and poultry producers, fruit growers, grain producers, and food processing plants to support County Ingestion Pathway activities. The County continued to monitor State press releases, advising the State EOC of any inaccuracies with regard to County matters (such as the incorrect location of the distribution point for farmer reentry permits in Dauphin County listed in the State press release on 10/19/89), and effectively addressed Ingestion Pathway hazard rumor control challenges (including a question concerning the sampling of local honey).

RECOVERY, REENTRY AND RELOCATION

Objective 33, the ability to implement appropriate measures for controlled reentry and recovery, was adequately demonstrated. During this phase of the exercise the EOC continued to effectively manage reentry of farmers and other vital personnel designated as emergency workers. After discussing key decisions with the State EOC, the EMC arranged for a planning meeting with the local emergency management staffs of the evacuated municipalities to further coordinate resettlement measures to be initiated on 10/21/89 for the areas outside of restricted zones. The EOC staff determined that vital services, including grocery stores and gas stations, would be re-established ahead of the return of the general populace. Special emphasis was placed on the development of press releases by the County to explain why resettlement of Dauphin County residents was being delayed until 10/21/89 while the residents on the west side of the Susquehanna River were authorized to return home a day earlier.

Objective 34, the ability to maintain staffing on a continuous 24-hour basis by an actual shift change, was adequately demonstrated. All EOC positions were relieved in a staggered manner during the exercise.

Objective 35, the ability to coordinate the evacuation of onsite personnel, was not demonstrated. The EOC received no messages from either the Utility or the State EOC regarding the evacuation of Utility personnel during the exercise. (See Objective #35, under the State EOC.)

DAUPHIN COUNTY RECEPTION AND MASS CARE CENTERS

Objective 4, the ability to communicate with all appropriate locations, organizations and field personnel was adequately demonstrated at both the reception center in Williamstown and mass care center in Elizabethville.

Objective 6, the ability to continuously monitor and control emergency worker exposure was adequately demonstrated by the radiological monitoring team at the mass care center.

Objective 21, the procedures, facilities, equipment and personnel for the registration, radiological monitoring and decontamination of evacuees was adequately demonstrated. Evacuees were provided strip maps at the reception center and directed to the mass care center 10 miles away. Evacuees and vehicles were immediately monitored upon their arrival at the mass care center by a team comprising 6 Civil Air Patrol volunteers. Evacuees found to be contaminated would be directed to showers located nearby. Contaminated vehicles would be diverted to the local Fire Station for a wash down.

The mass care decon team members were unsure of how to properly dispose of run off contaminated waste water, as no public drainage system is available in the area that would provide the "considerable dilution" mentioned in the Dauphin County plan (Annex E to the County EOP, Appendix 13, page E-13-20) and Annex E to the Commonwealth EOP (Appendix 5, page E-5-23). The County should provide further guidance in this matter. Given the fact that FEMA policy ("Policy Statement on Disposal of Waste Water and Contaminated Products From Decontamination Activities," December 1988) advises that such waste water is unlikely to present a significant public hazard, and that BRP procedures (Annex E to the Dauphin County EOP, Appendix 16, page E-16-4) provide for the monitoring and decontamination of reception and mass care centers during recovery measures, it is recommended that the decon team be instructed to allow the waste water to run off, assuring no drinking water sources will be impacted and the run off area is secured until recovery measures can be conducted.

Objective 22, the facilities, equipment and personnel for congregate care of evacuees was adequately demonstrated. The Mass Care Director was very knowledgeable of procedures and effectively managed congregate care activities. Areas and supplies for the feeding, sleeping and recreation of evacuees were inspected and found to be adequate. Registration processes as well as procedures for the safe keeping of valuables were thoroughly explained. Staffing of the

center was more than adequate for demonstration purposes, and included a Registered Nurse.

DAUPHIN COUNTY EMERGENCY WORKER DECONTAMINATION STATION

Objective 2, the ability to fully alert, mobilize and activate personnel for both facility and field-based emergency functions was adequately demonstrated. Eight monitoring/decontamination team members were promptly mobilized to staff the station.

Objective 4, the ability to communicate with all appropriate locations, organizations, and field personnel was adequately demonstrated at the emergency worker decon station, which utilized RACES as a primary communications system but also had several back up means available.

Objective 6, the ability to continuously monitor and control emergency worker exposure was adequately demonstrated by the monitoring/decon team members.

Objective 25, the facilities, equipment, supplies, procedures and personnel for decontamination of emergency workers, equipment and vehicles was adequately demonstrated. Vehicles were monitored when they entered the facility and properly routed to either a radiologically clean area or the decontamination area. Appropriate decon procedures were utilized by the decon team. Emergency workers were also properly monitored and provided decontamination (showers) if found to have contamination exceeding the trigger point. Appropriate decontamination monitoring report forms were available at the station.

CENTRAL DAUPHIN SCHOOL DISTRICT

Objective 19, the ability and resources necessary to implement appropriate protective actions for school children within the plume EP2, was adequately demonstrated. Several aspects of the School District's emergency plan were discussed during an interview with the Supervisor of Pupil Services, including the assembling of the District Response Team and notification procedures for school principals, the District Transportation Coordinator, and host schools. Interviewing of the Transportation Coordinator verified the availability of adequate school busses for the conduct of an evacuation, of all which are equipped with two-way radios. The Coordinator also explained procedures for contacting and mobilizing bus divers. Questioning of the South Side Elementary School principal revealed that this official was familiar with his plan designated responsibilities, and could effectively manage the evacuation of his school.

DERRY TOWNSHIP SCHOOL DISTRICT

Objective 19, the ability and resources necessary to implement appropriate protective actions for school children within the plume EPZ, was adequately demonstrated. The School District Superintendent was effectively in charge of emergency operations. Interviewing of the participating school principal indicated that this official could adequately manage the evacuation of students and staff to the host school. The participating bus driver was adequately instructed on his mission.

HARRISBURG SCHOOL DISTRICT

Objective 19, the ability and resources necessary to implement appropriate protective actions for school children within the plume EPZ, was adequately demonstrated. The District Superintendent and his staff were aware of the resources available in the District, and explained how they would be directed to assure the protection of students. Interviewing of the Foose School officials and the participating bus driver verified the school's ability to conduct an evacuation of students to the host school according to the directives of the School District plan. It is recommended, however, that the school busses be equipped with radios, or that an escorted caravan procedure be adopted by the School District to assure the availability of communications with busses in the event one should break down enroute to the host school.

LOWER DAUPHIN SCHOOL DISTRICT

Objective 19, the ability and resources necessary to implement appropriate protective actions for school children within the plume EPZ, was adequately demonstrated. Both the Lower Dauphin School District and Londonderry Elementary School followed plan procedures during the exercise. All appropriate District and school officials were promptly alerted and directed to take appropriate actions. Interviewing of the contracted bus company dispatcher indicated an adequate knowledge of procedures with regard to the notification and provision of bus drivers.

MIDDLETOWN AREA SCHOOL DISTRICT

Objective 19, the ability and resources necessary to implement appropriate protective actions for school children within the plume EPZ, was adequately demonstrated. The School District Superintendent exhibited a sufficient knowledge of the plan and ability to implement its procedures. All required notifications were made to the schools within the District upon reception of Emergency Classification Level declarations from the County. The principal of the Demey Elementary School demonstrated adequate knowledge of the plan and ability to manage an evacuation of his students and staff. Procedures for acquiring busses and drivers from the Johnson and Capitol Bus

Capitol Bus Companies to support the evacuation were also demonstrated and found to be sufficient.

MILTON HERSHEY SCHOOL DISTRICT

Objective 19, the ability and resources necessary to implement appropriate protective actions for school children within the plume EPZ, was adequately demonstrated. The Milton Hershey School District consists of a large campus with all students in residence. Evacuation procedures are in place that entail effective notification, dispatching of busses and vans (equipped with two-way radios) for student and staff transportation, and campus traffic control measures. These procedures are further supported by a Public Relations Office capable of handling media calls or inquiries (which will be coordinated with the Dauphin County EOC).

STEELTON-HIGHSPIRE SCHOOL DISTRICT

Objective 19, the ability and resources necessary to implement appropriate protective actions for school children within the plume EPZ, was adequately demonstrated. Both the School District Superintendent and participating school principal were well versed in the emergency plan, and capable of directing protective actions for the students and school staffs. The availability of transportation to support student evacuations was verified during the exercise demonstration.

Communications with the County EOC were problematic. The one-way radio located in the Superintendent's office for key incident messages failed, and mandated notification of ECLs by commercial phone. Although the use of this backup communications means did not negatively impact the School District's response, it is recommended that the failure of the radio system be investigated and corrected.

CONEWAGO TOWNSHIP EOC

Objective 1, the ability to monitor, understand and use emergency classification levels (ECLs) through the appropriate implementation of emergency functions and activities corresponding to ECLs, was adequately demonstrated.

Objective 2, the ability to fully alert, mobilize and activate personnel for both facility and field-based emergency functions was adequately demonstrated.

Objective 3, the ability to direct, coordinate and control emergency activities was adequately demonstrated. The Deputy EMC was effectively in charge of the EOC staff and operations. He systematically covered all response checklist items, properly confirmed significant actions and available resources, and provided periodic updates and briefings to all staff members.

Objective 4, the ability to communicate with all appropriate locations, organizations, and field personnel was adequately demonstrated.

Objective 5, facilities, equipment, displays and other materials to support emergency operations was adequately demonstrated.

Objective 6, the ability to continuously monitor and control emergency worker exposure was adequately demonstrated. Although adequate supplies of Dosimetry and KI were available in the EOC during the exercise, the municipal EOP indicates an incorrect number of units for the EOC staff, listing 12 units while the staff comprises 17 people (including the 5 personnel designated as Route Alert Team members). (See Attachment I-6, page I-17 of the SOPs for the Conewago Township EOP, and pages 4 through 7 of the Township Notification and Resource Manual.) The municipal plan should be amended to indicate the provision of adequate dosimetry and KI supplies (as mandated by SOP I, page I-5 of the Township Plan).

Objective 12, the ability to initially alert the public within the 10-mile EPZ and begin dissemination of an instructional message within 15 minutes of a decision by appropriate State and/or local officials, was adequately demonstrated as applicable to municipal duties.

Objective 16, the ability to make the decision to recommend the use of KI to emergency workers based on predetermined criteria as well as to distribute and administer it once the decision is made, was adequately demonstrated as applicable to municipal responsibilities.

Objective 18, the ability and resources necessary to implement appropriate protective actions for the impacted permanent and transient plume EPZ population, was adequately demonstrated.

DERRY TOWNSHIP EOC

Objective 1, the ability to monitor, understand and use emergency classification levels (ECLs) through the appropriate implementation of emergency functions and activities corresponding to ECLs, was adequately demonstrated.

Objective 2, the ability to fully alert, mobilize and activate personnel for both facility and field-based emergency functions was adequately demonstrated.

Objective 3, the ability to direct, coordinate and control emergency activities was adequately demonstrated.

Objective 4, the ability to communicate with all appropriate locations, organizations, and field personnel was adequately demonstrated.

Objective 5, facilities, equipment, displays and other materials to support emergency operations was adequately demonstrated.

Objective 6, the ability to continuously monitor and control emergency worker exposure was adequately demonstrated.

Objective 12, the ability to initially alert the public within the 10-mile EPZ and begin dissemination of an instructional message within 15 minutes of a decision by appropriate State and/or local officials, was adequately demonstrated as applicable to a municipal EOC.

Objective 16, the ability to make the decision to recommend the use of KI to emergency workers based on predetermined criteria as well as to distribute and administer it once the decision is made, was adequately demonstrated as applicable to municipal responsibilities.

Objective 18, the ability and resources necessary to implement appropriate protective actions for the impacted permanent and transient plume EPZ population, was adequately demonstrated.

Objective 20, the organizational ability and resources necessary to control evacuation traffic flow and to control access to evacuated and sheltered areas was adequately demonstrated.

HARRISBURG CITY EOC

Objective 1, the ability to monitor, understand and use emergency classification levels (ECLs) through the appropriate implementation of emergency functions and activities corresponding to ECLs, was adequately demonstrated.

Objective 2, the ability to fully alert, mobilize and activate personnel for both facility and field-based emergency functions was adequately demonstrated.

Objective 3, the ability to direct, coordinate and control emergency activities was adequately demonstrated.

Objective 4, the ability to communicate with all appropriate locations, organizations, and field personnel was adequately demonstrated.

Objective 5, facilities, equipment, displays and other materials to support emergency operations was adequately demonstrated.

Objective 6, the ability to continuously monitor and control emergency worker exposure was adequately demonstrated.

Objective 12, the ability to initially alert the public within the 10-mile EPZ and begin dissemination of an instructional message within 15 minutes of a decision by appropriate State and/or local officials, was adequately demonstrated as applicable to a municipal EOC.

Objective 16, the ability to make the decision to recommend the use of KI to emergency workers based on predetermined criteria as well as to distribute and administer it once the decision is made, was adequately demonstrated as applicable to municipal responsibilities.

Objective 18, the ability and resources necessary to implement appropriate protective actions for the impacted permanent and transient plume EPZ population, was adequately demonstrated.

Objective 20, the organizational ability and resources necessary to control evacuation traffic flow and to control access to evacuated and sheltered areas was adequately demonstrated.

HIGHSPIRE BOROUGH EOC

Objective 1, the ability to monitor, understand and use emergency classification levels (ECLs) through the appropriate implementation of emergency functions and activities corresponding to ECLs, was adequately demonstrated.

Objective 2, the ability to fully alert, mobilize and activate personnel for both facility and field-based emergency functions was adequately demonstrated.

Objective 3, the ability to direct, coordinate and control emergency activities was adequately demonstrated.

Objective 4, the ability to communicate with all appropriate locations, organizations, and field personnel was adequately demonstrated.

Objective 5, facilities, equipment, displays and other materials to support emergency operations was adequately demonstrated.

Objective 6, the ability to continuously monitor and control emergency worker exposure was adequately demonstrated.

Objective 12, the ability to initially alert the public within the 10-mile EPZ and begin dissemination of an instructional message within 15 minutes of a decision by appropriate State and/or local officials, was adequately demonstrated as applicable to a municipal EOC.

Objective 16, the ability to make the decision to recommend the use of KI to emergency workers based on predetermined criteria as well as to distribute and administer it once the decision is made, was adequately demonstrated as applicable to municipal responsibilities.

Objective 18, the ability and resources necessary to implement appropriate protective actions for the impacted permanent and transient plume EPZ population, was adequately demonstrated.

Objective 20, the organizational ability and resources necessary to control evacuation traffic flow and to control access to evacuated and sheltered areas was adequately demonstrated.

HUMMELSTOWN BOROUGH EOC

Objective 1, the ability to monitor, understand and use emergency classification levels (ECLs) through the appropriate implementation of emergency functions and activities corresponding to ECLs, was adequately demonstrated.

Objective 2, the ability to fully alert, mobilize and activate personnel for both facility and field-based emergency functions was adequately demonstrated.

Objective 3, the ability to direct, coordinate and control emergency activities was adequately demonstrated. It is recommended, however, that the EMC conduct periodic briefings to assure that the EOC staff members are aware of the current ECL, plant conditions, status of unmet needs, and individual responsibilities. No formal briefings were conducted during the course of the exercise.

Objective 4, the ability to communicate with all appropriate locations, organizations, and field personnel was adequately demonstrated.

Objective 5, facilities, equipment, displays and other materials to support emergency operations was adequately demonstrated. Due to the small size of the EOC facility, radio traffic from the RACES unit competed with intra-EOC discussions. It is recommended that the RACES operator be relocated to an adjacent office within the EOC building.

Objective 6, the ability to continuously monitor and control emergency worker exposure was adequately demonstrated.

Objective 12, the ability to initially alert the public within the 10-mile EPZ and begin dissemination of an instructional message within 15 minutes of a decision by appropriate State and/or local officials, was adequately demonstrated as applicable to a municipal EOC. The route alert teams were activated and then dispatched in a timely manner. The briefing conducted by the Fire/Rescue Director for the Route Alert personnel, however, did not adequately address the notification of hearing impaired residents or the actual message to be announced over the vehicle loud speakers. (These matters were cleared up by the intercession of the Borough EMC.) Further training is recommended for the Fire/Rescue Director with regard to municipal responsibilities for alert and notification of Borough residents.

Objective 16, the ability to make the decision to recommend the use of KI to emergency workers based on predetermined criteria as well as to distribute and administer it once the decision is made, was adequately demonstrated as applicable to municipal responsibilities.

Objective 18, the ability and resources necessary to implement appropriate protective actions for the impacted permanent and transient plume EPZ population, was adequately demonstrated.

Objective 20, the organizational ability and resources necessary to control evacuation traffic flow and to control access to evacuated and sheltered areas was adequately demonstrated.

LONDONDERRY TOWNSHIP EOC

Objective 1, the ability to monitor, understand and use emergency classification levels (ECLs) through the appropriate implementation of emergency functions and activities corresponding to ECLs, was adequately demonstrated.

Objective 2, the ability to fully alert, mobilize and activate personnel for both facility and field-based emergency functions was adequately demonstrated.

Objective 3, the ability to direct, coordinate and control emergency activities was adequately demonstrated.

Objective 4, the ability to communicate with all appropriate locations, organizations, and field personnel was adequately demonstrated.

Objective 5, facilities, equipment, displays and other materials to support emergency operations was adequately demonstrated. Fiscal realities permitting, it is recommended that the Township acquire a dedicated backup generator for the EOC, rather than depend on the fire truck generator which becomes unavailable during route alerting and emergency calls.

Objective 6, the ability to continuously monitor and control emergency worker exposure was adequately demonstrated.

Objective 12, the ability to initially alert the public within the 10-mile EPZ and begin dissemination of an instructional message within 15 minutes of a decision by appropriate State and/or local officials, was adequately demonstrated as applicable to a municipal EOC.

Objective 16, the ability to make the decision to recommend the use of KI to emergency workers based on predetermined criteria as well as to distribute and administer it once the decision is made, was adequately demonstrated as applicable to municipal responsibilities.

Objective 18, the ability and resources necessary to implement appropriate protective actions for the impacted permanent and transient plume EPZ population, was adequately demonstrated.

Objective 20, the organizational ability and resources necessary to control evacuation traffic flow and to control access to evacuated and sheltered areas was adequately demonstrated.

LOWER PAXTON TOWNSHIP EOC

Objective 1, the ability to monitor, understand and use emergency classification levels (ECLs) through the appropriate implementation of emergency functions and activities corresponding to ECLs, was adequately demonstrated.

Objective 2, the ability to fully alert, mobilize and activate personnel for both facility and field-based emergency functions was adequately demonstrated.

Objective 3, the ability to direct, coordinate and control emergency activities was adequately demonstrated.

Objective 4, the ability to communicate with all appropriate locations, organizations, and field personnel was adequately demonstrated.

Objective 5, facilities, equipment, displays and other materials to support emergency operations was adequately demonstrated.

Objective 6, the ability to continuously monitor and control emergency worker exposure was adequately demonstrated. Dosimetry distribution procedures and the briefing of emergency workers were excellent with one exception: the workers were not advised to report to the Emergency Worker Decontamination Station at the conclusion of their mission (as prescribed by the Township Plan, page I-15).

Objective 12, the ability to initially alert the public within the 10-mile EPZ and begin dissemination of an instructional message within 15 minutes of a decision by appropriate State and/or local officials, was adequately demonstrated as applicable to a municipal EOC.

Objective 16, the ability to make the decision to recommend the use of KI to emergency workers based on predetermined criteria as well as to distribute and administer it once the decision is made, was adequately demonstrated as applicable to municipal responsibilities.

Objective 18, the ability and resources necessary to implement appropriate protective actions for the impacted permanent and transient plume EPZ population, was adequately demonstrated.

Objective 20, the organizational ability and resources necessary to control evacuation traffic flow and to control access to evacuated and sheltered areas was adequately demonstrated.

LOWER SWATARA TOWNSHIP EOC

Objective 1, the ability to monitor, understand and use emergency classification levels (ECLs) through the appropriate implementation of emergency functions and activities corresponding to ECLs, was not adequately demonstrated. The EOC staff misinterpreted the County EOC message received at 1940 hours relaying the Governor's declaration of a "State of Disaster Emergency," as the escalation to General Emergency. The staff initiated EOC activities normally triggered by the General Emergency escalation (outlined in the Township SOPs) and continued to address functions assigned to this ECL for at least 15 minutes, when the Federal evaluator asked the EMC for an explanation of staff actions. Accurate monitoring of the four established ECLs is critical to effective response by the Township, as indicated by the Township plan where it states that "In order to preclude risk municipalities from having to prepare and maintain two separate plans (an EOP and RERP), the Response Actions for each member of a municipal EOC staff have also been organized according to the four ECLs unique to a nuclear power plant incident" (page A-3, Standard Operating Procedures for Lower Swatara Township, August 1989).

Objective 2, the ability to fully alert, mobilize and activate personnel for both facility and field-based emergency functions was adequately demonstrated.

Objective 3, the ability to direct, coordinate and control emergency activities was adequately demonstrated.

Objective 4, the ability to communicate with all appropriate locations, organizations, and field personnel was adequately demonstrated.

Objective 5, facilities, equipment, displays and other materials to support emergency operations was adequately demonstrated.

Objective 6, the ability to continuously monitor and control emergency worker exposure was adequately demonstrated.

Objective 12, the ability to initially alert the public within the 10-mile EPZ and begin dissemination of an instructional message within 15 minutes of a decision by appropriate State and/or local officials, was adequately demonstrated as applicable to a municipal EOC.

Objective 16, the ability to make the decision to recommend the use of KI to emergency workers based on predetermined criteria as well as to distribute and administer it once the decision is made, was adequately demonstrated as applicable to municipal responsibilities.

Objective 18, the ability and resources necessary to implement appropriate protective actions for the impacted permanent and transient plume EPZ population, was adequately demonstrated.

Objective 20, the organizational ability and resources necessary to control evacuation traffic flow and to control access to evacuated and sheltered areas was adequately demonstrated.

MIDDLETOWN/ROYALTON BOROUGHS EOC

Objective 1, the ability to monitor, understand and use emergency classification levels (ECLs) through the appropriate implementation of emergency functions and activities corresponding to ECLs, was adequately demonstrated.

Objective 2, the ability to fully alert, mobilize and activate personnel for both facility and field-based emergency functions was adequately demonstrated.

Objective 3, the ability to direct, coordinate and control emergency activities was adequately demonstrated.

Objective 4, the ability to communicate with all appropriate locations, organizations, and field personnel was adequately demonstrated.

Objective 5, facilities, equipment, displays and other materials to support emergency operations was adequately demonstrated.

Objective 6, the ability to continuously monitor and control emergency worker exposure was adequately demonstrated. However, only high range dosimeters (0-200 REM) were available in the EOC for emergency workers. The Joint Borough plan (page I-17) as well as Annex E to the Dauphin County EOP (page E-13-4) direct that emergency workers will be equipped with both high range and middle range (0-20 REM CD 730 or DCA 622) dosimeters.

Objective 12, the ability to initially alert the public within the 10-mile EPZ and begin dissemination of an instructional message within 15 minutes of a decision by appropriate State and/or local officials, was adequately demonstrated as applicable to a municipal EOC.

Objective 16, the ability to make the decision to recommend the use of KI to emergency workers based on predetermined criteria as well as to distribute and administer it once the decision is made, was adequately demonstrated as applicable to municipal responsibilities.

Objective 18, the ability and resources necessary to implement appropriate protective actions for the impacted permanent and transient plume EPZ population, was adequately demonstrated.

Objective 20, the organizational ability and resources necessary to control evacuation traffic flow and to control access to evacuated and sheltered areas was adequately demonstrated.

PAXTANG BOROUGH EOC

Objective 1, the ability to monitor, understand and use emergency classification levels (ECLs) through the appropriate implementation of emergency functions and activities corresponding to ECLs, was adequately demonstrated.

Objective 2, the ability to fully alert, mobilize and activate personnel for both facility and field-based emergency functions was adequately demonstrated.

Objective 3, the ability to direct, coordinate and control emergency activities was adequately demonstrated.

Objective 4, the ability to communicate with all appropriate locations, organizations, and field personnel was adequately demonstrated.

Objective 5, facilities, equipment, displays and other materials to support emergency operations was adequately demonstrated.

Objective 6, the ability to continuously monitor and control emergency worker exposure was adequately demonstrated.

Objective 12, the ability to initially alert the public within the 10-mile EPZ and begin dissemination of an instructional message within 15 minutes of a decision by appropriate State and/or local officials, was adequately demonstrated as applicable to a municipal EOC.

Objective 16, the ability to make the decision to recommend the use of KI to emergency workers based on predetermined criteria as well as to distribute and administer it once the decision is made, was adequately demonstrated as applicable to municipal responsibilities.

Objective 18, the ability and resources necessary to implement appropriate protective actions for the impacted permanent and transient plume EPZ population, was adequately demonstrated.

Objective 20, the organizational ability and resources necessary to control evacuation traffic flow and to control access to evacuated and sheltered areas was adequately demonstrated.

SOUTH HANOVER TOWNSHIP EOC

Objective 1, the ability to monitor, understand and use emergency classification levels (ECLs) through the appropriate implementation of emergency functions and activities corresponding to ECLs, was adequately demonstrated.

Objective 2, the ability to fully alert, mobilize and activate personnel for both facility and field-based emergency functions was adequately demonstrated.

Objective 3, the ability to direct, coordinate and control emergency activities was adequately demonstrated.

Objective 4, the ability to communicate with all appropriate locations, organizations, and field personnel was adequately demonstrated.

Objective 5, facilities, equipment, displays and other materials to support emergency operations was adequately demonstrated.

Objective 6, the ability to continuously monitor and control emergency worker exposure was adequately demonstrated. Dosimetry and KI supplies were not pre-distributed to the EOC as prescribed by the County plan. The South Hanover Radiological Officer called Dauphin County immediately upon his arrival in the EOC and requested that sufficient supplies be forwarded. The dosimetry supplies arrived at 1826 hours, in advance of the escalation to Site Area Emergency. This timely delivery of adequate dosimetry and KI establishes plan compliance with regard to the future pre-distribution of dosimetry and KI, and precludes any need for corrective action.

Objective 12, the ability to initially alert the public within the 10-mile EPZ and begin dissemination of an instructional message within 15 minutes of a decision by appropriate State and/or local officials, was adequately demonstrated as applicable to a municipal EOC.

Objective 16, the ability to make the decision to recommend the use of KI to emergency workers based on predetermined criteria as well as to distribute and administer it once the decision is made, was adequately demonstrated as applicable to municipal responsibilities.

Objective 18, the ability and resources necessary to implement appropriate protective actions for the impacted permanent and transient plume EPZ population, was adequately demonstrated.

Objective 20, the organizational ability and resources necessary to control evacuation traffic flow and to control access to evacuated and sheltered areas was adequately demonstrated.

STEELTON BOROUGH EOC

Objective 1, the ability to monitor, understand and use emergency classification levels (ECLs) through the appropriate implementation of emergency functions and activities corresponding to ECLs, was adequately demonstrated.

Objective 2, the ability to fully alert, mobilize and activate personnel for both facility and field-based emergency functions was adequately demonstrated.

Objective 3, the ability to direct, coordinate and control emergency activities was adequately demonstrated.

Objective 4, the ability to communicate with all appropriate locations, organizations, and field personnel was adequately demonstrated.

Objective 5, facilities, equipment, displays and other materials to support emergency operations was adequately demonstrated.

Objective 6, the ability to continuously monitor and control emergency worker exposure was adequately demonstrated.

Objective 12, the ability to initially alert the public within the 10-mile EPZ and begin dissemination of an instructional message within 15 minutes of a decision by appropriate State and/or local officials, was adequately demonstrated as applicable to a municipal EOC.

Objective 16, the ability to make the decision to recommend the use of KI to emergency workers based on predetermined criteria as well as to distribute and administer it once the decision is made, was adequately demonstrated as applicable to municipal responsibilities.

Objective 18, the ability and resources necessary to implement appropriate protective actions for the impacted permanent and transient plume EPZ population, was adequately demonstrated.

Objective 20, the organizational ability and resources necessary to control evacuation traffic flow and to control access to evacuated and sheltered areas was adequately demonstrated.

SWATARA TOWNSHIP EOC

Objective 1, the ability to monitor, understand and use emergency classification levels (ECLs) through the appropriate implementation of emergency functions and activities corresponding to ECLs, was adequately demonstrated. However, announcement of the escalation to Site Area Emergency in the EOC (which was received by the RACES operator only a few minutes after declaration) was delayed for over one hour, and thereby, the corresponding staff activities that are triggered by this escalation were delayed as well. All ECL escalations should be promptly announced in the EOC.

Objective 2, the ability to fully alert, mobilize and activate personnel for both facility and field-based emergency functions was adequately demonstrated.

Objective 3, the ability to direct, coordinate and control emergency activities was adequately demonstrated. However, the Township did not utilize the EOC Message Form provided in the Township plan (Attachment C-3, page C-6 of the Swatara Township SOP, July 1989). Utilization of this message form will enhance coordination of the Township's response, especially in light of the fact of the disjointed facilities that temporarily house emergency operations. (See Objective #5.)

Objective 4, the ability to communicate with all appropriate locations, organizations, and field personnel was adequately demonstrated.

Objective 5, facilities, equipment, displays and other materials to support emergency operations, was marginally adequate. Emergency operations were directed from a van and garage due to the fact that a new and permanent EOC facility is presently under construction.

Objective 6, the ability to continuously monitor and control emergency worker exposure was adequately demonstrated.

Objective 12, the ability to initially alert the public within the 10-mile EPZ and begin dissemination of an instructional message within 15 minutes of a decision by appropriate State and/or local officials, was adequately demonstrated as applicable to a municipal EOC.

Objective 16, the ability to make the decision to recommend the use of KI to emergency workers based on predetermined criteria as well as to distribute and administer it once the decision is made, was adequately demonstrated as applicable to municipal responsibilities.

Objective 18, the ability and resources necessary to implement appropriate protective actions for the impacted permanent and transient plume EPZ population, was adequately demonstrated.

Objective 20, the organizational ability and resources necessary to control evacuation traffic flow and to control access to evacuated and sheltered areas was adequately demonstrated.

LANCASTER COUNTY

COUNTY EOC

Objective 1, the ability to monitor, understand and use emergency classification levels (ECLs) was adequately demonstrated. The EOC utilized the classification levels to structure response operations in compliance with County plan directives.

Objective 2, the ability to fully alert, mobilize and activate personnel for both facility and field-based emergency functions was adequately demonstrated during all phases of the exercise.

Objective 3, the ability to direct, coordinate and control emergency activities was adequately demonstrated. Both Emergency Management Coordinators (first and second shift) displayed competence and skill in managing the County response. The Operations Room staffing arrangement supported the conduct of clear briefings and was also conducive to problem-solving with the various agency representatives. Direction and control were effective throughout all phases of the exercise.

Internal hard copy message traffic could have been better managed, however, with regard to the provision of State EOC news release copies to the County PIO. The distribution of two copies was unnecessarily delayed: a State news release FAX announcing the Alert declaration arrived in the County EOC at 1735 hours but did not reach the County PIO until 1840 hours, while the State news release FAX announcing the Governor's declaration of a State Emergency was received at 1930 hours but not forwarded to the PIO until 2034 hours. Fortunately these distribution delays did not negatively impact the County public information function as contents of both releases were discussed in EOC-wide briefings conducted by the EMC shortly after their arrival.

Objective 4, the ability to communicate with all appropriate locations, organizations, and field personnel, was adequately demonstrated. The numerous communication systems available to the EOC staff effectively supported the County's emergency response.

Objective 5, the adequacy of facilities, equipment, displays and other materials to support emergency operations was effectively demonstrated. Although somewhat crowded, the Lancaster County EOC was well equipped and optimally arranged to support response functions.

Objective 6, the ability to continuously monitor and control emergency worker exposure, was adequately demonstrated. The County furnished TLDs and KI to the lead risk municipality (Elizabethtown Borough) at alert. Self-reading dosimeters were already pre-distributed to the five risk municipalities. Provisions for the distribution of dosimetry and KI to farmers and other personnel

authorized access to restricted areas during the Ingestion Pathway Phase of the exercise were also adequately demonstrated.

Objective 12, the ability to initially alert the public within the 10-mile EPZ and begin dissemination of an instructional message within 15 minutes of a decision by appropriate officials, was not adequately demonstrated. At 1935 hours the County received a message from the State EOC directing that sirens be activated at 1944 hours, but not specifying an activation time for the EBS broadcast. The County did activate sirens at 1944 hours in compliance with State instructions. The County delayed the activation of the EBS broadcast for three minutes (1947 hours), however, to provide residents a reasonable amount of time (while sirens continued to sound) to tune into their respective EBS station prior to the commencement of the message. This delay in the activation of the EBS broadcast exceeded the 15 minute time limit which was initiated by the decision in the State EOC at 1930 hours. (See Objective #12 under the State EOC.)

Objective 13, the ability to coordinate the formulation and dissemination of accurate information and instructions to the public after the initial alert and notification has occurred, was adequately demonstrated. Appropriate EBS messages were coordinated with the State EOC and released by the County EOC in a timely fashion for both the Emergency Plume and Ingestion Pathway Phases of the exercise.

Objective 14, the ability to brief the media in an accurate, coordinated, and timely manner, was adequately demonstrated.

Objective 15, the ability to establish and operate rumor control in a coordinated and timely fashion, was adequately demonstrated. Rumor control challenges were effectively addressed by the EOC during the exercise, including 7 actual inquiries concerning the activation of sirens.

Objective 16, the ability to make the decision to recommend the use of KI by emergency workers was adequately demonstrated. KI supplies were distributed by the County in compliance with plan directives. The County also effectively forwarded the Secretary of Health's recommendation to ingest KI to municipal and county emergency workers.

Objective 18, the ability and resources necessary to implement appropriate protective actions for the impacted permanent and transient plume EPZ population (including transit-dependent persons, special needs populations, handicapped persons and institutionalized persons) was adequately demonstrated. The County coordinated transportation to evacuate handicapped people, hospital patients, and college students.

INGESTION EXPOSURE PATHWAY

Objective 30, the ability to implement both preventative and emergency protective actions for Ingestion Pathway hazards, was adequately demonstrated. Extensive instructions originating at both the State and County EOCs regarding the processing and movement of agricultural products from the areas impacted by plume deposition, were forwarded to farmers as well as consumers by County Extension Agents through the EBS, news media, and (simulated) personal contacts. These instructions were supported by the County's maintenance of thorough information on dairy farms, meat and poultry producers, grain producers, food processing plants, milk tanker companies, and orchards.

RECOVERY, REENTRY, AND RELOCATION

Objective 33, the ability to implement appropriate measures for controlled reentry and recovery, was adequately demonstrated by the Lancaster County EOC to the extent allowed by the exercise scenario and play. The County made the appropriate decision to defer resettlement processes until the habitability of impacted areas within the 10 mile EPZ could be confirmed. Tentative plans were drawn regarding the re-establishment of municipal EOCs; long term access control measures were developed for the deposition area in Elizabethtown.

The County EOC found the narrative description and graphs forwarded by the State EOC depicting the Elizabethtown restricted area to be inconsistent and unclear. For example, the graph received by fax on 10/19/89 at 1256 hours depicted the deposition area as centered on Elizabethtown Borough, while the narrative description received from the State at 1417 hours depicted an area centered on Mount Joy. (The State's use of Legislative routes mandated the translation of the narrative description into local road names more familiar to ACP and municipal emergency personnel.) The graph of the restricted area received from the State EOC in the County at 1546 hours, termed "General Deposition Area," was accompanied by no explanation, and depicted an area that included Elizabethtown Borough, and parts of East Donegal and Mount Joy Township outside the 10 mile EPZ that had not been evacuated and still contained 11,000 residents. This last graph was not accompanied by any State instructions addressing the relocation of these additional 11,000 residents. (See Objective #32 under the State EOC.)

Objective 34, the ability to maintain staffing on a continuous 24-hour basis by an actual shift change, was adequately demonstrated by the Lancaster County EOC.

LANCASTER COUNTY RECEPTION AND MASS CARE CENTERS

Objective 4, the ability to communicate with all appropriate locations, organizations and field personnel was adequately demonstrated at both the reception and mass care centers.

Objective 6, the ability to continuously monitor and control emergency worker exposure was adequately demonstrated by the radiological monitoring teams at the mass care center.

Objective 21, the procedures, facilities, equipment and personnel for the registration, radiological monitoring and decontamination of evacuees was adequately demonstrated at the Centerville Jr. High School Mass Care Center. Ten experienced personnel provided monitoring and decontamination for evacuees, while a fire pumper and other equipment was on hand to facilitate the decontamination of vehicles.

Objective 22, the adequacy of facilities, equipment and personnel for congregate care of evacuees was effectively demonstrated. Red Cross management and efforts in support of the congregate care for evacuees were outstanding. Two RNs and an assistant were available to assure the provision of first aid. Other personnel effectively provided access control, security, and traffic direction.

LANCASTER COUNTY EMERGENCY WORKER DECONTAMINATION STATION

Objective 2, the ability to fully alert, mobilize and activate personnel for both facility and field-based emergency functions was adequately demonstrated at the Lancaster County Emergency Worker Decontamination Station.

Objective 4, the ability to communicate with all appropriate locations, organizations, and field personnel was adequately demonstrated.

Objective 6, the ability to continuously monitor and control emergency worker exposure was adequately demonstrated by the Emergency Worker Decontamination Team.

Objective 25, the facilities, equipment, supplies, procedures and personnel for decontamination of emergency workers, equipment and vehicles was adequately demonstrated at the Mount Joy Fire Company Decontamination Station.

DONEGAL SCHOOL DISTRICT

Objective 19, the ability and resources necessary to implement appropriate protective actions for school children within the plume EPZ, was adequately demonstrated. The Donegal School District Superintendent and Maytown Elementary School Principal were knowledgeable of the District plan, and took appropriate actions upon

notification of the incident by the Lancaster County EOC. Interviewing of the Johnson Bus Company dispatcher revealed that adequate busses and drivers could be dispatched in a timely manner to support evacuation of district schools.

ELIZABETHTOWN AREA SCHOOL DISTRICT

Objective 19, the ability and resources necessary to implement appropriate protective actions for school children within the plume EPZ, was adequately demonstrated. However, certain procedural problems were observed at the School District Office during the exercise. The District Business Manager, who served as the Superintendent's designated substitute, misinterpreted the initial notification at 0845 hours from Lancaster County of a declaration of an Alert at Three Mile Island, as notification of a General Emergency declaration. Instead of questioning or verifying this declaration, the Business Manager advised the risk schools and the Johnson Bus Company dispatcher of this wrong emergency classification declaration. When questioned on his actions by the Federal evaluator, the Business Manager contacted the County EMC at 0906 hours and was advised that the proper classification was an Alert.

A second procedural issue observed during the exercise at the School District Office concerned the notification of the Manheim Township School District. The Elizabethtown Area School District failed to notify the Manheim Township District of the incident until 1030 hours when the Business Manager advised the risk schools of the evacuation protective action directive received from the County. The Elizabethtown Area School District plan directs that the Manheim School District will be notified at the declaration of an Alert, Site Area and General Emergency classification (pages 5-6 of the December 1986 Elizabethtown Area School District RERP).

Interviewing of the East High Elementary School Principal confirmed that protective actions for students and staff (evacuation to the Manheim Township Middle School) would be properly executed in the event of a real incident. Questioning of the Johnson Bus Company dispatcher verified the availability of 60 buses to support evacuation of District risk schools.

CONOY TOWNSHIP EOC

Objective 1, the ability to monitor, understand and use emergency classification levels (ECLs) through the appropriate implementation of emergency functions and activities corresponding to ECLs, was adequately demonstrated.

Objective 2, the ability to fully alert, mobilize and activate personnel for both facility and field-based emergency functions was adequately demonstrated.

Objective 3, the ability to direct, coordinate and control emergency activities was adequately demonstrated.

Objective 4, the ability to communicate with all appropriate locations, organizations, and field personnel was adequately demonstrated.

Objective 5, facilities, equipment, displays and other materials to support emergency operations was adequately demonstrated.

Objective 6, the ability to continuously monitor and control emergency worker exposure was adequately demonstrated.

Objective 12, the ability to initially alert the public within the 10-mile EPZ and begin dissemination of an instructional message within 15 minutes of a decision by appropriate State and/or local officials, was adequately demonstrated as applicable to a municipal EOC.

Objective 16, the ability to make the decision to recommend the use of KI to emergency workers based on predetermined criteria as well as to distribute and administer it once the decision is made, was adequately demonstrated as applicable to municipal responsibilities.

Objective 18, the ability and resources necessary to implement appropriate protective actions for the impacted permanent and transient plume EPZ population, was adequately demonstrated.

EAST DONEGAL TOWNSHIP EOC

Objective 1, the ability to monitor, understand and use emergency classification levels (ECLs) through the appropriate implementation of emergency functions and activities corresponding to ECLs, was adequately demonstrated.

Objective 2, the ability to fully alert, mobilize and activate personnel for both facility and field-based emergency functions was adequately demonstrated.

Objective 3, the ability to direct, coordinate and control emergency activities was adequately demonstrated.

Objective 4, the ability to communicate with all appropriate locations, organizations, and field personnel was adequately demonstrated.

Objective 5, facilities, equipment, displays and other materials to support emergency operations was adequately demonstrated.

Objective 6, the ability to continuously monitor and control emergency worker exposure was adequately demonstrated.

Objective 12, the ability to initially alert the public within the 10-mile EPZ and begin dissemination of an instructional message within 15 minutes of a decision by appropriate State and/or local officials, was adequately demonstrated as applicable to a municipal EOC.

Objective 16, the ability to make the decision to recommend the use of KI to emergency workers based on predetermined criteria as well as to distribute and administer it once the decision is made, was adequately demonstrated as applicable to municipal responsibilities.

Objective 18, the ability and resources necessary to implement appropriate protective actions for the impacted permanent and transient plume EPZ population, was adequately demonstrated.

Objective 20, the organizational ability and resources necessary to control evacuation traffic flow and to control access to evacuated and sheltered areas was adequately demonstrated.

ELIZABETHTOWN BOROUGH EOC

Objective 1, the ability to monitor, understand and use emergency classification levels (ECLs) through the appropriate implementation of emergency functions and activities corresponding to ECLs, was adequately demonstrated.

Objective 2, the ability to fully alert, mobilize and activate personnel for both facility and field-based emergency functions was adequately demonstrated.

Objective 3, the ability to direct, coordinate and control emergency activities was adequately demonstrated.

Objective 4, the ability to communicate with all appropriate locations, organizations, and field personnel was adequately demonstrated.

Objective 5, facilities, equipment, displays and other materials to support emergency operations was adequately demonstrated.

Objective 6, the ability to continuously monitor and control emergency worker exposure was adequately demonstrated.

Objective 12, the ability to initially alert the public within the 10-mile EPZ and begin dissemination of an instructional message within 15 minutes of a decision by appropriate State and/or local officials, was adequately demonstrated as applicable to a municipal EOC.

Objective 16, the ability to make the decision to recommend the use of KI to emergency workers based on predetermined criteria as well as to distribute and administer it once the decision is made, was adequately demonstrated as applicable to municipal responsibilities.

Objective 18, the ability and resources necessary to implement appropriate protective actions for the impacted permanent and transient plume EPZ population, was adequately demonstrated.

Objective 20, the organizational ability and resources necessary to control evacuation traffic flow and to control access to evacuated and sheltered areas was adequately demonstrated.

MOUNT JOY TOWNSHIP EOC

Objective 1, the ability to monitor, understand and use emergency classification levels (ECLs) through the appropriate implementation of emergency functions and activities corresponding to ECLs, was adequately demonstrated.

Objective 2, the ability to fully alert, mobilize and activate personnel for both facility and field-based emergency functions was adequately demonstrated.

Objective 3, the ability to direct, coordinate and control emergency activities was adequately demonstrated.

Objective 4, the ability to communicate with all appropriate locations, organizations, and field personnel was adequately demonstrated.

Objective 5, facilities, equipment, displays and other materials to support emergency operations was adequately demonstrated.

Objective 6, the ability to continuously monitor and control emergency worker exposure was adequately demonstrated.

Objective 12, the ability to initially alert the public within the 10-mile EPZ and begin dissemination of an instructional message within 15 minutes of a decision by appropriate State and/or local officials, was adequately demonstrated as applicable to a municipal EOC.

Objective 16, the ability to make the decision to recommend the use of KI to emergency workers based on predetermined criteria as well as to distribute and administer it once the decision is made, was adequately demonstrated as applicable to municipal responsibilities.

Objective 18, the ability and resources necessary to implement appropriate protective actions for the impacted permanent and transient plume EPZ population, was adequately demonstrated.

Objective 20, the organizational ability and resources necessary to control evacuation traffic flow and to control access to evacuated and sheltered areas was adequately demonstrated.

WEST DONEGAL TOWNSHIP EOC

Objective 1, the ability to monitor, understand and use emergency classification levels (ECLs) through the appropriate implementation of emergency functions and activities corresponding to ECLs, was adequately demonstrated.

Objective 2, the ability to fully alert, mobilize and activate personnel for both facility and field-based emergency functions was adequately demonstrated.

Objective 3, the ability to direct, coordinate and control emergency activities was adequately demonstrated.

Objective 4, the ability to communicate with all appropriate locations, organizations, and field personnel was adequately demonstrated.

Objective 5, facilities, equipment, displays and other materials to support emergency operations was adequately demonstrated.

Objective 6, the ability to continuously monitor and control emergency worker exposure was adequately demonstrated.

Objective 12, the ability to initially alert the public within the 10-mile EPZ and begin dissemination of an instructional message within 15 minutes of a decision by appropriate State and/or local officials, was adequately demonstrated as applicable to a municipal EOC.

Objective 16, the ability to make the decision to recommend the use of KI to emergency workers based on predetermined criteria as well as to distribute and administer it once the decision is made, was adequately demonstrated as applicable to municipal responsibilities.

Objective 18, the ability and resources necessary to implement appropriate protective actions for the impacted permanent and transient plume EPZ population, was adequately demonstrated.

Objective 20, the organizational ability and resources necessary to control evacuation traffic flow and to control access to evacuated and sheltered areas was adequately demonstrated.

LEBANON COUNTY

COUNTY EOC

Objective 1, the ability to monitor, understand and use emergency classification levels (ECLs) through the appropriate implementation of emergency functions and activities corresponding to ECLs, was adequately demonstrated. Upon notification of a change in classification level, the Emergency Management Coordinator immediately notified emergency workers at all field locations as well as the South Londonderry Township EOC, and then briefed all members of the County EOC staff. County response procedures were structured upon the four ECLs.

Objective 2, the ability to fully alert, mobilize and activate personnel for both facility and field-based emergency functions was adequately demonstrated. Over 20 different positions were manned in this EOC. All positions were staffed by 1720 hours.

Objective 3, the ability to direct, coordinate and control emergency activities was demonstrated in an outstanding manner. The Emergency Management Coordinator displayed proficiency in managing emergency response functions. All staff members worked as a unit to insure each necessary response action was executed in an efficient manner. Detailed discussions were held throughout the duration of the exercise which involved all agencies represented in the EOC. Of special note is the team work and enthusiasm which was apparent at this EOC.

Objective 4, the ability to communicate with all appropriate locations, organizations, and field personnel was adequately demonstrated. The primary communication system is a full function city-county communications network capable of handling thousands of incoming or outgoing communications. Multiple backup systems are also available for the County EOC, including RACES, which provided an excellent communications support link between the County EOC and field activities during the exercise.

Objective 5, the facilities, equipment, displays and other materials to support emergency operations was adequately demonstrated.

Objective 6, the ability to continuously monitor and control emergency worker exposure was adequately demonstrated. Sufficient equipment was available for all field locations. Dosimetry kits (two self-reading dosimeters, 0-20 R and 0-200 R, TLDs, KI, chargers, and dosimetry report forms) were delivered to South Londonderry Township during the Alert phase after all equipment was checked and zeroed.

County field workers, including the monitoring/decontamination teams for the Emergency Worker Decontamination Station and the Mass Care center, were briefed on Radiological Exposure Control by the County Radiological Officer. During this briefing the Radiological Officer

neglected to advise the field workers to read their dosimeters every 30 minutes (as directed by the Lebanon County EOP, Appendix 13, page E-13-31). Furthermore, the Radiological Officer was not aware of County policy whereby emergency workers are required to request authorization to exceed exposures of 5 REM (page E-13-32 of the County EOP.), but advised, instead, that workers would be rotated at 25 REM and should call in a thyroid scan value of 0.1 mr/hr.

Objective 12, the ability to initially alert the public within the 10-mile EPZ and begin dissemination of an instructional message within 15 minutes of a decision by appropriate State and/or local officials was adequately demonstrated. Two alert and notification activations occurred. The first was an actual activation of the entire system at 1944; the second was a simulated activation at 2048. Lebanon County was notified by the State at 1934 that sirens would be activated at 1944 hours. The County notified field locations and South Londonderry Township at 1937 hours. Sirens were activated at 1944 as directed and an EBS broadcast initiated at 1945 hours.

The State EOC provided protective actions to Lebanon County at 2038 hours, but did not advise the County when and if sirens and EBS should be activated. The County called the State at 2045 hours and was advised to activate the sirens and EBS immediately. In response the County advised South Londonderry Township and other field locations, and then activated sirens (simulated) at 2048 hours, initiating a simulated EBS announcement immediately afterwards. Route alerting was ordered to be accomplished for both sets of siren and EBS activations.

Objective 13, the ability to coordinate the formulation and dissemination of accurate information and instructions to the public in a timely fashion after the initial alert and notification has occurred was adequately demonstrated. Approximately six instructional messages for the public were prepared and discussed during the exercise. Each message contained appropriate information applicable to the circumstances. All messages were prepared in English, Spanish and Vietnamese. There are approximately 3000 Spanish speaking residents and 100 Vietnamese residents living within the 10-mile EPZ in Lebanon County.

Objective 14, the ability to brief the media in an accurate, coordinated and timely manner was adequately demonstrated. Several media representatives visited the EOC during the exercise. In addition, a press conference was given by the County Commissioners, EMC and PIO.

Objective 15, the ability to establish and operate rumor control in a coordinated and timely fashion was adequately demonstrated. A rumor control center was established within the scope of the PIO function. Three persons were available to answer general questions while appropriate staff members were available to field any specific

queries. Rumor control numbers were published in news releases to the public.

Objective 16, the ability to make the decision to recommend the use of KI to emergency workers based on predetermined criteria, as well as to distribute and administer it once the decision is made, if necessitated by radioiodine releases was adequately demonstrated. The County was notified at 2112 hours that the Secretary of the Department of Health had authorized the use of KI for emergency workers. All County and South Londonderry Township emergency workers were notified of this at 2114 hours. Adequate supplies of KI were available for emergency workers.

Objective 18, the ability and resources necessary to implement appropriate protective actions for the impacted permanent and transient plume EPZ population (including transit-dependent persons, special needs populations, handicapped persons and institutionalized persons) was adequately demonstrated. The County Health Representative, Fire and Ambulance Representatives, and Transportation Officer worked jointly throughout the duration of the Emergency Plume Phase of the exercise to provide for the safe evacuation and care of special needs residents. Bus providers were actually contacted; ambulances were coordinated; hospitals were contacted; route alerting was accomplished for the hearing-impaired. In addition, discussions were conducted during the Recovery, Reentry, and Relocation Phase of the exercise to address the safe resettlement of special needs residents as well as for the general public. The School Representative in the EOC discussed response actions assuring the safety of students who live within the 10-mile EPZ but attend school outside the EPZ.

INGESTION EXPOSURE PATHWAY

Objective 30, the ability to implement both preventive and emergency protective actions for Ingestion Pathway hazards was adequately demonstrated. All appropriate staff participated in the Ingestion Pathway Phase of the exercise. County Extension Agents and members of the County Emergency Board were very active during the exercise. When the County received the initial footprint from the State, it was noted that part of Lebanon County was listed as an area of possible contamination. This area was plotted on the County map. County Emergency Board members were asked to provide information on farms, food processing and distribution points, and water resources in this part of the County.

Further analysis of the suspected deposition area by County EOC staff members revealed that part of Palmyra may have also been impacted. The State was informed of this and asked if the County could get some monitoring done in this area to confirm contamination. The State EOC advised the County that field monitors were already at the scene. The County received no further information on the extent of contamination in Palmyra until a revised footprint was faxed to the

County that eliminated the concern for any relocation of residents in the area.

Several news releases were discussed and prepared from information provided to the County by the State PIO during the Ingestion Pathway Phase of the exercise. In addition, farmers were again advised of how to be certified as emergency workers and where to acquire dosimetry.

RECOVERY, REENTRY, AND RELOCATION

Objective 33, the ability to implement appropriate measures for controlled reentry and recovery was adequately demonstrated. The County received a message that the Hershey water system was reading higher contamination levels. County staff members advised the EMC that part of Palmyra received water from this system. The EMC and staff located water drums, and then arranged transport and a staging area to provide water to the residents of Palmyra if necessary, keeping the State EOC apprised of all actions. At 1430 hours the State advised Lebanon County that the water in the Hershey water system was not contaminated.

Lebanon County provides mass care for some Dauphin County residents who were possible relocation candidates. Discussions were held in an attempt to find more suitable temporary housing for these people. It was also decided to keep South Londonderry Township residents in mass care centers until resettlement plans were coordinated with Dauphin and Lancaster Counties. Appropriate actions were simulated to prepare staff and emergency workers for tasks necessary to accomplish the coordinated resettlement of South Londonderry Township.

Objective 34, the ability to maintain staffing on a continuous 24-hour basis by an actual shift change was adequately demonstrated. The Lebanon County EOC staff demonstrated a complete shift change during the period from 1730 through 2045 hours. This shift change was accomplished at all plan designated EOC positions. Second shift personnel were briefed by out-going participants.

LEBANON COUNTY RECEPTION/MASS CARE CENTERS

Objective 4, the ability to communicate with all appropriate locations, organizations, and field personnel was adequately demonstrated. Communications were available through the use of commercial telephones, mobile phones, FMA Radi, Fire, Police, and Ambulance radio nets as well as ARES and RACES.

Objective 6, the ability to continuously monitor and control emergency worker exposure was adequately demonstrated, albeit the monitoring/decontamination team members did not read their dosimeters and record their exposure readings on the Dosimetry-KI Report Form,

as required by the County plan. (See Objective #6 under the Lebanon County EOC.)

Objective 21, procedures, facilities, equipment and personnel for the registration, radiological monitoring and decontamination of evacuees and vehicles was adequately demonstrated. One monitoring team was set up at the mass care facility; however 40 additional trained monitors (both male and female) are available if needed. Only one shower area was actually set up but facilities are available and were explained for the decontamination of both male and female evacuees. There was some confusion, however, over the trigger levels requiring decontamination. It was thought that the trigger level was 0.5mr/hr above background when it is actually 0.1mr/hr above background. (See Lebanon County EOP, Appendix 13, page E-13-3).

Objective 22, the facilities, equipment and personnel for congregate care of evacuees was adequately demonstrated at the North Lebanon High School Mass Care Center.

LEBANON COUNTY EMERGENCY WORKER DECONTAMINATION STATION

Objective 2, the ability to fully alert, mobilize and activate personnel for both facility and field-based emergency functions was adequately demonstrated. Initial mobilization instructions to the staff of the decontamination station were to report to the County EOC to receive radiological exposure control equipment and appropriate briefings. At 1910 the team was dispatched to the Fredericksburg Fire Company where the decontamination station was set up for emergency workers. The facility was operational by 2000 hours.

Objective 4, the ability to communicate with all appropriate locations, organizations, and field personnel was adequately demonstrated.

Objective 6, the ability to continuously monitor and control emergency worker exposure was adequately demonstrated. The decontamination station staff were supplied with TLDs (simulated), two direct read dosimeters (0-20R and 0-200R), chargers for the direct reading dosimeters, exposure record keeping forms, and KI. Dosimeters were zeroed and exposures recorded. The staff was not aware of the necessity to get authorization to exceed 5 REM exposure and stated that 25 REM was the exposure limit. (See Objective # 6 under the Lebanon County EOC).

Objective 25, facilities, equipment, supplies, procedures and personnel for decontamination of emergency workers and for waste disposal was adequately demonstrated. Decontamination of vehicles occurred at the mass care facility. The Decontamination Station was manned by the HAZ-MAT Volunteer Unit of Lebanon County. This was an excellent facility which kept potentially contaminated personnel separate from "clean" personnel. The radiological instruments were

used properly and in accordance with the plan. The team monitored one individual and demonstrated decontamination procedures satisfactorily.

The radiological survey meters utilized at the Decontamination Station were last calibrated in August 1986. Although PEMA requires the calibration frequency recommended by the manufacturer (which is every four years), an annual calibration (as directed by FEMA REP-2, page 6-4) is, nonetheless, recommended for survey meters to be utilized during a radiological incident at Three Mile Island.

SOUTH LONDONDERRY TOWNSHIP EOC

Objective 1, the ability to monitor, understand and use emergency classification levels (ECLs) through the appropriate implementation of emergency functions and activities corresponding to the ECLs as required by the scenario, was adequately demonstrated. Checklists have been provided to each staff member which designate tasks to be accomplished at each classification level.

Objective 2, the ability to fully alert, mobilize and activate personnel for both facility and field-based emergency functions was adequately demonstrated. Twelve different positions were staffed at the EOC. Full staffing occurred at 1805.

Objective 3, the ability to direct, coordinate and control emergency activities was adequately demonstrated. Although the Emergency Management Coordinator and most of the staff of South Londonderry Township are relatively new, they were knowledgeable of their duties and performed well as a response team.

Objective 4, the ability to communicate with all appropriate locations, organizations, and field personnel was adequately demonstrated.

Objective 5, the facilities, equipment, displays and other materials to support emergency operations was adequately demonstrated.

Objective 6, the ability to continuously monitor and control emergency worker exposure was adequately demonstrated. Radiological Exposure Control equipment was delivered to South Londonderry Township during the Alert phase by the Radiological Officer from Lebanon County. Township EOC Radiological Officer properly briefed emergency workers on how to use dosimetry and record keeping requirements.

Objective 12, the ability to initially alert the public within the 10-mile EPZ and begin dissemination of an instructional message within 15 minutes of a decision by appropriate State officials was adequately demonstrated as applicable to Township responsibilities.

Objective 16, the ability to make the decision to recommend the use of KI to emergency workers based on predetermined criteria, as well as to distribute and administer it once the decision is made, was adequately demonstrated. Instructions to administer KI were transmitted by Lebanon County to South Londonderry Township at 2114 hours.

Objective 18, the ability to implement appropriate protective actions for the impacted permanent and transient population was adequately demonstrated. The special needs list available in the EOC, however, did not specify what special needs were required by four individuals

listed. These needs were established by actual contacts with the four individuals on the list during the exercise.

Objective 20, the organizational ability and resources necessary to control evacuation traffic flow and to control access to evacuated and sheltered areas was adequately demonstrated. Three traffic control points were manned (simulated) by the Township Police.

YORK COUNTY

YORK COUNTY EOC

Objective 1, the ability to monitor, understand and use emergency classification levels (ECLs) through the appropriate implementation of emergency functions and activities corresponding to ECLs as required by the scenario, was adequately demonstrated. The relevant functions and activities were performed in accordance with the emergency plan.

Objective 2, the ability to fully alert, mobilize and activate EOC personnel was adequately demonstrated. All County-level positions were manned.

Objective 3, the ability to direct, coordinate and control emergency activities was adequately demonstrated by the Director and Deputy Director. The Governor's protective action decision (evacuation of the entire 10-mile EPZ) was properly coordinated and implemented. Although the State EOC failed to provide coordination instructions regarding the activation of the public alert and notification system at the time of evacuation, the County Director simulated sounding the sirens, updating the EBS message, and instructed the municipalities to perform route alerting.

Objective 4, the ability to communicate with all appropriate locations, organizations, and field personnel, was adequately demonstrated. The EOC had sufficient primary and backup communications equipment to meet anticipated contingencies. The availability of two facsimile machines was a benefit to the EOC by permitting the sending and receiving of hard copy messages, status updates, and news releases with a minimum of delay.

RACES operators never arrived at four municipal EOCs (Lewisberry Borough, Newberry Township, Springettsbury Township, and York Haven Borough), despite requests by those municipalities to the County EOC. County officials, in coordination with the York County RACES organization, should review the assignment procedure to ensure that a RACES operator is provided to all locations.

Objective 5, facilities, equipment, displays and other materials to support emergency operations, was adequately demonstrated at the County EOC. It is recommended that the EOC be enlarged and reconfigured, if possible, to reduce the number of small rooms, and provide a larger operations area.

Objective 6, the ability to continuously monitor and control emergency worker exposure, was adequately demonstrated. The EOC had sufficient quantities of dosimeters, TLDs, survey meters, and related equipment, as specified by the plan, for use by County emergency workers and farmers, and for delivery to the municipal EOCs. The Radiological Officer demonstrated thorough knowledge of exposure

control procedures. The agricultural agent demonstrated the procedure for certifying farmers as emergency workers to allow them to reenter the EPZ after evacuation. The procedure for delivering the TLD/KI kits to the municipal EOCs, as specified in the plan, was properly demonstrated via simulation.

Objective 12, appropriate measures to initially alert the public within the 10-mile EPZ and begin dissemination of an instructional message within 15 minutes of a decision was demonstrated by County officials at the EOC. This was initiated by PEMA during the Site Area Emergency phase, prior to any public protective actions. The County Director took an active role in directing the activation of the siren system, which occurred at the time specified by PEMA, and in activating the EBS station. Although PEMA's instructions did not specify a time for EBS activation, this was accomplished in York County about one minute after the siren sounding commenced, which complied with FEMA's 15-minute requirement. The Public Information Officer demonstrated the preparation of an appropriate EBS message explaining the reason for the activation, based on a pre-scripted message in the plan.

Objective 13, the ability to coordinate the formulation and dissemination of accurate information and instructions to the public in a timely fashion, after the initial alert and notification, was adequately demonstrated. The County PIO demonstrated the preparation of an EBS message, based on a comprehensive pre-scripted message contained in the plan, for evacuation. Public instructions for farmers, and for ingestion measures, were also addressed. It is recommended that pre-scripted messages containing such instructions be included in the plan.

Objective 14, the ability to brief the media in an accurate, coordinated and timely manner, was adequately demonstrated by the public information staff at the County EOC, in accordance with the plan. The staff demonstrated numerous telephone briefings of media representatives, and provided accurate and current information. Media representatives were not present at the EOC during the exercise, although space was available in the courthouse for briefings.

Objective 15, The ability to establish and operate rumor control in a coordinated and timely fashion, was demonstrated by the public information staff. Status updates and other important information were promptly provided to the public information and rumor control staff.

Objective 16, the ability to make the decision to recommend the use of KI to emergency workers and institutionalized persons based on predetermined criteria, as well as to distribute and administer it once the decision is made, if necessitated by radioiodine releases, was demonstrated at the County EOC. An adequate supply of KI was available, and officials knew the proper authorization procedure. The decision to authorize the use of KI was received from the State

EOC and passed on to the municipalities and County emergency workers.

Objective 18, the ability and resources necessary to implement appropriate protective actions for the impacted permanent and transient plume EPZ population (including transit-dependent persons, special needs populations, handicapped persons and institutionalized persons), was adequately demonstrated. The EOC staff made thorough arrangements for assisting a nursing home to evacuate, and providing busses and ambulances to meet the municipal needs.

INGESTION EXPOSURE PATHWAY

Objective 30, the ability to implement both preventive and emergency protective actions for Ingestion Pathway hazards, was adequately demonstrated. As the County was not subjected to plume exposure, the impact relative to emergency PAGs was minimal. However, discussions with County officials and USDA Agriculture and Soil Conservation Service representatives revealed that they were well prepared to respond, and had appropriate means for identifying and contacting farmers, dairies, and food processors. Preventive PAGs, implemented during the plume exposure phase of the exercise, included shutting down Susquehanna River intakes for municipal water systems, and advising farmers to shelter animals, and use stored and/or protected feed and water.

RECOVERY, REENTRY AND RELOCATION

Objective 33, the ability to implement appropriate measures for controlled reentry and recovery, was adequately demonstrated. Access control was maintained by the State Police and National Guard while State decision makers identified those areas (including all of the York County EPZ) that were safe for resettlement. Adequate measures to permit farmers to reenter the EPZ were established. The procedure included issuing dosimetry, and monitoring exiting farmers at an emergency worker decontamination station. In consultation with PEMA and Cumberland County, York County officials established an ad hoc plan for the staged resettlement of the evacuated area. Municipal services (including Emergency Management Agencies, fire, police, and ambulance) resettled, re-established operations, and set up traffic control first; the nursing home patients were resettled next; finally, the general public were permitted to return, but were requested to do so in stages, with those west of Interstate 83 preceding those east of the highway by 2 hours. Also addressed was the desirability for food, fuel, and pharmaceutical vendors to precede the general public, assuring provision of these essential commodities to returnees. It is recommended that the plan be amended to include such specific procedures for resettling uncontaminated areas.

Objective 34, the ability to maintain staffing on a continuous 24-hour basis by an actual shift change, was adequately demonstrated.

The first-shift EOC staff members were responsible for contacting their replacements, and performing a briefing of the incoming personnel.

YORK COUNTY RECEPTION AND MASS CARE CENTERS

Objective 4, the ability to communicate with all appropriate locations, organizations and field personnel, was adequately demonstrated at the York County reception and mass care centers. Commercial telephones, amateur radio, and Red Cross radio provided redundant communication links.

Objective 6, the ability to continuously monitor and control emergency worker exposure, was adequately demonstrated. Monitoring personnel were familiar with the use of the proper TLDs, dosimeters and KI, and knew who to contact for authorization for exposure in excess of the 5R limit.

Objective 21, procedures, facilities, equipment, and personnel for the registration, radiological monitoring and decontamination of evacuees, was adequately demonstrated at the York County reception and mass care centers. Arriving evacuees were first monitored; only those uncontaminated were accepted for registration. Three properly equipped monitoring teams demonstrated excellent survey technique, and adequately described the decontamination procedure, which included the issuance of replacement clothing, if necessary. Registration was properly performed by Red Cross personnel, using the standard Red Cross Form.

Objective 22, the facilities, equipment, and personnel for congregate care of evacuees was adequately demonstrated. The Susquehannock Middle School was a very good mass care facility, with sufficient amenities to house up to 500 evacuees. The Red Cross personnel were promptly activated, and performed evacuee registration and assignment to shelter in an excellent manner. A food supply for three days was immediately available, as was an emergency generator to power the storage freezers, if necessary. York County Family Services personnel provided crisis counseling and information. The Health Services group provided a nurse, while an ambulance was on stand-by at the center. Police and further medical and/or ambulance support were available via Red Cross radio, if needed.

YORK COUNTY EMERGENCY WORKER DECONTAMINATION STATION

Objective 2, the ability to fully alert, mobilize and activate personnel for the York County Emergency Worker Decontamination Station was adequately demonstrated. The decontamination team was mobilized by the Commonwealth Fire Company.

Objective 4, the ability to communicate with all appropriate locations, organizations, and field personnel was adequately demonstrated at the York County Emergency Worker Decontamination

Station via radio and commercial telephones. RACES provided backup.

Objective 6, the ability to continuously monitor and control emergency worker exposure was adequately demonstrated by the staff at the decontamination facility. Staff members were knowledgeable concerning the appropriate dosimeters, TLD, KI and related equipment. They adequately demonstrated the procedures for reading and recording their exposures, and knew the procedure for KI authorization.

Objective 25, the facilities, equipment, supplies, procedures, and personnel for decontamination of emergency workers, equipment and vehicles was adequately demonstrated at the York County emergency worker decontamination station. The facility provided adequate space for separating contaminated and uncontaminated vehicles, and for monitoring and decontaminating them. Proper procedures were demonstrated for monitoring personnel, vehicles and equipment, and maintaining records. The decontamination procedure was in accordance with the plan. Although the shower room had only one entrance, the possibility for recontamination was minimized by the use of a clean floor covering (plastic sheeting) for each decontaminated person to exit upon.

YORK COUNTY MEDICAL SERVICES

Objective 4, the ability to communicate with all appropriate locations, organizations, and field personnel was adequately demonstrated. Both the ambulance and the hospital had sufficient primary and secondary communications capability.

Objective 6, the ability to continuously monitor and control emergency worker exposure was adequately demonstrated by the ambulance crew and hospital staff. Personnel were equipped with dosimeters, and were knowledgeable of exposure control procedures and techniques.

Objective 23, the vehicles, equipment, procedures and personnel for transporting contaminated, injured or exposed individuals was not adequately demonstrated. Although the ambulance crew participated enthusiastically, they had not been provided with sufficient training or equipment to accomplish this mission. The crew complained that their training was limited to a three-hour classroom session prior to the exercise. Via questioning by the evaluator, the crew described the basic procedures that should be followed, but these were not actually demonstrated, and it was apparent that the crew would benefit from further training. The crew members also reported that they had not been issued survey meters or contamination control supplies. As a result, there was no demonstration of the use of survey meters to monitor the patient or ambulance for radiological contamination, nor were anti-contamination measures to protect the inside of the ambulance demonstrated. The ambulance company also did not have a written plan or procedure.

Objective 24, the medical facility's equipment, procedures and personnel for handling contaminated, injured or exposed individuals was adequately demonstrated at Hanover Hospital. Appropriate anti-contamination procedures were demonstrated for the receiving area and emergency room. A Radiation Safety Officer advised the staff regarding radiation levels and procedures. The patient was properly monitored, decontamination procedures were demonstrated, and appropriate equipment was available. Although the staff reported receiving a minimum of training, and this was their first exercise, they performed well. They will benefit from further training and experience, and from written plans and procedures.

CENTRAL YORK SCHOOL DISTRICT

Objective 19, the ability and resources necessary to implement appropriate protective actions for school children within the plume EPZ, was adequately demonstrated. After receiving notification of the school evacuation decision from the County EOC, School District officials notified the principals of the host school and the four schools to be evacuated, in accordance with the plan. The procedure for contacting the bus drivers, who were placed on standby prior to the evacuation decision, was demonstrated by district officials; activation of all but one driver was simulated, however. School officials had written procedures which included routes to the host school. The need for police to perform traffic control at the schools was addressed administratively, in coordination with the County EOC. All district and school personnel interviewed were familiar with the plan, well-prepared, and organized.

NORTHEASTERN SCHOOL DISTRICT

Objective 19, the ability and resources necessary to implement appropriate protective actions for school children within the plume EPZ, was adequately demonstrated. The District Superintendent demonstrated the notification procedure, and was knowledgeable regarding the transportation available and destination of the evacuated students. Thirty-six busses were needed to evacuate the 2585 students and adult attendants from 6 plume-zone schools. A contractor provided 14 of these; the remainder were District-owned. After receiving the evacuation decision, the Superintendent's staff notified the Transportation Director and other District officials, the school principals, and the bus contractor, in accordance with the written procedure. One bus was dispatched to the York Haven Elementary School, where the principal notified teachers and staff, and had class rosters available. Maintenance and custodial staff were responsible for traffic control, while the bus driver was knowledgeable of her duties in transporting and delivering the students to the host school, and had a route sheet.

CONEWAGO TOWNSHIP EOC

Objective 1, the ability to monitor, understand and use emergency classification levels (ECLs) through the appropriate implementation of emergency functions and activities corresponding to ECLs as required by the scenario, was adequately demonstrated by the Emergency Management Coordinator (EMC) and staff.

Objective 2, the ability to fully alert, mobilize and activate EOC personnel was adequately demonstrated.

Objective 3, the ability to direct, coordinate and control emergency activities was adequately demonstrated. The EMC demonstrated professional leadership, and the staff were fully supportive in meeting their responsibilities.

Objective 4, the ability to communicate with all appropriate locations, organizations, and field personnel was adequately demonstrated. A RACES operator provided backup capability.

Objective 5, the facilities, equipment, displays and other materials to support emergency operations was adequately demonstrated. The EOC was well-equipped, and included facsimile and photocopy machines.

Objective 6, the ability to continuously monitor and control emergency worker exposure was adequately demonstrated. All required equipment and supplies were available, and the Radiological Officer demonstrated the distribution procedure and provided complete instructions to the emergency workers. He also maintained exposure records. The Township also used a thorough videotaped briefing on exposure control, instruments and use of KI.

Objective 12, the ability to initially alert the public within the 10-mile EPZ and begin dissemination of an instructional message within 15 minutes of a decision, was adequately demonstrated as applicable to municipal responsibilities.

Objective 16, the ability to make the decision to recommend the use of KI to emergency workers and institutionalized persons based on predetermined criteria, as well as to distribute and administer it once the decision is made, if necessitated by radioiodine releases, was adequately demonstrated at the EOC, to the extent required by the plan and scenario events. The emergency workers were issued KI (simulated) and the Radiological Officer had the proper knowledge regarding procedures for its use, which was authorized in accordance with the plan.

Objective 18, the ability and resources necessary to implement appropriate protective actions for the impacted permanent and transient plume EPZ population (including transit-dependent

persons, special needs populations, handicapped persons and institutionalized persons) was adequately demonstrated. Those needing assistance had been identified, and arrangements for appropriate vehicles were properly coordinated with the County EOC.

Objective 20, the organizational ability and resources necessary to control evacuation traffic flow and to control access to evacuated and sheltered areas was adequately demonstrated. The staff demonstrated the activation of three TCP/ACP points. Those manning the posts were briefed prior to dispatch; contact in the field was maintained by fire department and police department radios.

DOVER TOWNSHIP EOC

Objective 1, the ability to monitor, understand and use emergency classification levels (ECLs) through the appropriate implementation of emergency functions and activities corresponding to ECLs as required by the scenario, was adequately demonstrated by the Emergency Management Coordinator (EMC) and staff.

Objective 2, the ability to fully alert, mobilize and activate EOC personnel, was adequately demonstrated. Either double-staffing or a shift change was demonstrated for all EOC positions, and members of the Board of Supervisors participated.

Objective 3, the ability to direct, coordinate and control emergency activities was adequately demonstrated.

Objective 4, the ability to communicate with all appropriate locations, organizations, and field personnel was adequately demonstrated. The primary systems operated without problem; RACES provided a backup link to the County EOC; a facsimile machine provided hard-copy capability.

Objective 5, the adequacy of facilities, equipment, displays and other materials to support emergency operations, was adequately demonstrated. The well-equipped EOC included a photocopier and computer.

Objective 6, the ability to continuously monitor and control emergency worker exposure was adequately demonstrated. The EOC had sufficient dosimeters, and delivery of the required TLDs and KI from the County was simulated. The Radiological Officer demonstrated the proper distribution procedure, and provided thorough instructions to the emergency workers.

Objective 12, the ability to initially alert the public within the 10-mile EPZ and begin dissemination of an instructional message within 15 minutes of a decision, was demonstrated by Township officials. Route alert teams were dispatched twice, in conjunction with the siren activations, and demonstrated appropriate procedures.

Objective 16, the ability to make the decision to recommend the use of KI to emergency workers and institutionalized persons based on predetermined criteria, as well as to distribute and administer it once the decision is made, if necessitated by radioiodine releases, was adequately demonstrated at the township. The EOC received a sufficient supply of KI (simulated) from the County, and the Radiological Officer properly instructed emergency workers regarding procedures for its use.

Objective 18, the ability and resources necessary to implement appropriate protective actions for the impacted permanent and transient plume EPZ population (including transit-dependent persons, special needs populations, handicapped persons and institutionalized persons) was adequately demonstrated.

Objective 20, the organizational ability and resources necessary to control evacuation traffic flow and to control access to evacuated and sheltered areas was adequately demonstrated.

FAIRVIEW TOWNSHIP EOC

Objective 1, the ability to monitor, understand and use emergency classification levels (ECLs) through the appropriate implementation of emergency functions and activities corresponding to ECLs as required by the scenario was adequately demonstrated.

Objective 2, the ability to fully alert, mobilize and activate EOC personnel was adequately demonstrated.

Objective 3, the ability to direct, coordinate and control emergency activities was adequately demonstrated.

Objective 4, the ability to communicate with all appropriate locations, organizations, and field personnel was adequately demonstrated. The EOC had an extensive communications capability, which included several radio systems, facsimile machine, cellular telephone, with RACES providing backup.

Objective 5, the facilities, equipment, displays and other materials to support emergency operations, was adequately demonstrated, although it is recommended that the status board be used to display not only ECLs, but also response actions and other significant developments.

Objective 6, the ability to continuously monitor and control exposure of Township emergency workers was adequately demonstrated. The Radiological Officer properly demonstrated distribution of dosimetry to emergency workers, and provided comprehensive instructions. Although both the County and Township plans indicate that 57 sets of self reading dosimeters have been pre-distributed to the municipality, the Township requested four additional sets. The municipality's actual needs should be reevaluated, and the plans should be revised to indicate this additional need, if necessary.

Objective 12, the ability to initially alert the public within the 10-mile EPZ and begin dissemination of an instructional message within 15 minutes of a decision, was adequately demonstrated as applicable to municipal responsibilities.

Objective 16, the ability to make the decision to recommend the use of KI to emergency workers and institutionalized persons based on predetermined criteria, as well as to distribute and administer it once the decision is made, if necessitated by radioiodine releases, was adequately demonstrated.

Objective 18, the ability and resources necessary to implement appropriate protective actions for the impacted permanent and transient plume EPZ population (including transit-dependent persons, special needs populations, handicapped persons and institutionalized persons) was adequately demonstrated.

Objective 20, the organizational ability and resources necessary to control evacuation traffic flow and to control access to evacuated and sheltered areas was adequately demonstrated.

GOLDSBORO BOROUGH EOC

Objective 1, the ability to monitor, understand and use emergency classification levels (ECLs) through the appropriate implementation of emergency functions and activities corresponding to ECLs as required by the scenario, was adequately demonstrated.

Objective 2, the ability to fully alert, mobilize and activate essential EOC personnel, was adequately demonstrated.

Objective 3, the ability to direct, coordinate and control emergency activities was adequately demonstrated.

Objective 4, the ability to communicate with all appropriate locations, organizations, and field personnel, was adequately demonstrated. In addition to the Township radio systems, RACES operators provided backup radio capability.

Objective 5, the facilities, equipment, displays and other materials to support emergency operations, was adequately demonstrated.

Objective 6, the ability to continuously monitor and control emergency worker exposure was adequately demonstrated. The EOC had sufficient dosimeters, and delivery of the necessary TLDs and KI was simulated by the County. The Radiological Officer demonstrated the distribution procedure, and provided complete instructions.

Objective 12, the ability to initially alert the public within the 10-mile EPZ and begin dissemination of an instructional message within 15 minutes of a decision, was adequately demonstrated by Borough officials as applicable to a municipal EOC.

Objective 16, the ability to make the decision to recommend the use of KI to emergency workers and institutionalized persons based on predetermined criteria, as well as to distribute and administer it once the decision is made, if necessitated by radioiodine releases, was adequately demonstrated.

Objective 18, the ability and resources necessary to implement appropriate protective actions for the impacted permanent and transient plume EPZ population (including transit-dependent persons, special needs populations, handicapped persons and institutionalized persons), was adequately demonstrated. Those needing assistance had been identified, and arrangements for appropriate vehicles were properly coordinated with the County EOC.

Objective 20, the organizational ability and resources necessary to control evacuation traffic flow and to control access to evacuated and sheltered areas was adequately demonstrated. Two control points were activated, and manned by the fire police.

HELLAM TOWNSHIP EOC

Objective 1, the ability to monitor, understand and use emergency classification levels (ECLs) through the appropriate implementation of emergency functions and activities corresponding to ECLs as required by the scenario was adequately demonstrated.

Objective 2, the ability to fully alert, mobilize and activate EOC personnel, was adequately demonstrated.

Objective 3, the ability to direct, coordinate and control emergency activities was adequately demonstrated. The EMC and Deputy EMC were clearly in charge, and the staff were knowledgeable of emergency procedures.

Objective 4, the ability to communicate with all appropriate locations, organizations, and field personnel was adequately demonstrated. The primary systems operated properly; RACES were available to provide backup radio capability.

Objective 5, the facilities, equipment, displays and other materials to support emergency operations, was adequately demonstrated.

Objective 6, the ability to continuously monitor and control emergency worker exposure was adequately demonstrated. The Radiological Officers demonstrated the procedure for distributing dosimetry to the emergency workers, and provided adequate instructions regarding exposure limits and frequency in reading dosimeters.

Objective 12, the ability to initially alert the public within the 10-mile EPZ and begin dissemination of an instructional message within 15 minutes of a decision, was adequately demonstrated by Township officials. One route alert team was actually dispatched; two others were simulated.

Objective 16, the ability to make the decision to recommend the use of KI to emergency workers and institutionalized persons based on predetermined criteria, as well as to distribute and administer it once the decision is made, if necessitated by radiiodine releases, was adequately demonstrated. Township officials were knowledgeable as to the procedure for authorizing the use of KI. Written and verbal instructions were provided to the emergency workers.

Objective 18, the ability and resources necessary to implement appropriate protective actions for the impacted permanent and transient plume EPZ population (including transit-dependent persons, special needs populations, handicapped persons and institutionalized persons), was adequately demonstrated. Vehicle

needs were identified, based on updated lists, and were coordinated with the County EOC.

Objective 0, the organizational ability and resources necessary to control evacuation traffic flow and to control access to evacuated and sheltered areas, was adequately demonstrated. Personnel to man two TCPs were briefed and dispatched at the appropriate time.

LEWISBERRY BOROUGH EOC

Objective 1, the ability to monitor, understand and use emergency classification levels (ECLs) through the appropriate implementation of emergency functions and activities corresponding to ECLs as required by the scenario, was adequately demonstrated.

Objective 2, the ability to fully alert, mobilize and activate EOC personnel was adequately demonstrated. The EOC was fully staffed, and was supported by the participation of elected officials.

Objective 3, the ability to direct, coordinate and control emergency activities was adequately demonstrated.

Objective 4, the ability to communicate with all appropriate locations, organizations, and field personnel was adequately demonstrated. The Borough's primary communications systems functioned properly and without problem. Despite several requests to the County EOC, however, a RACES operator never arrived to provide backup radio capability.

Objective 5, the facilities, equipment, displays and other materials to support emergency operations, was adequately demonstrated.

Objective 6, the ability to continuously monitor and control emergency worker exposure, was adequately demonstrated. The delivery by the County of the designated quantities of TLDs and KI was simulated, and the EOC had sufficient quantities of dosimeters. Borough emergency workers received appropriate instructions regarding the exposure control procedures to be followed, as well as exposure limits, from the Radiological Officer.

Objective 12, the ability to initially alert the public within the 10-mile EPZ and begin dissemination of an instructional message within 15 minutes of a decision, was adequately demonstrated by Township officials.

Objective 16, the ability to make the decision to recommend the use of KI to emergency workers and institutionalized persons based on predetermined criteria, as well as to distribute and administer it once the decision is made, if necessitated by radiiodine releases, was adequately demonstrated at the Township EOC.

Objective 18, the ability and resources necessary to implement appropriate protective actions for the impacted permanent and transient plume EPZ population (including transit-dependent persons, special needs populations, handicapped persons and institutionalized persons) was adequately demonstrated. The vehicles needed for evacuating the special-needs population, including the handicapped and transit-dependent, were identified by use of updated lists, and were coordinated with the County EOC.

Objective 20, the organizational ability and resources necessary to control evacuation traffic flow and to control access to evacuated and sheltered areas was adequately demonstrated.

MANCHESTER TOWNSHIP EOC

Objective 1, the ability to monitor, understand and use emergency classification levels (ECLs) through the appropriate implementation of emergency functions and activities corresponding to ECLs as required by the scenario, was adequately demonstrated.

Objective 2, the ability to fully alert, mobilize and activate EOC personnel, was adequately demonstrated. All EOC positions were staffed in a timely manner, and most positions were double staffed.

Objective 3, the ability to direct, coordinate and control emergency activities, was adequately demonstrated.

Objective 4, the ability to communicate with all appropriate locations, organizations, and field personnel was adequately demonstrated. The EOC has redundant systems, all of which functioned properly. A RACES operator provided additional backup.

Objective 5, the facilities, equipment, displays and other materials to support emergency operations, was adequately demonstrated. The EOC was well-equipped, and included facsimile and photocopy machines.

Objective 6, the ability to continuously monitor and control emergency worker exposure was adequately demonstrated. The required self reading dosimeters were available, while delivery of the TLDs and KI by the County was simulated. The Radiological Officer properly demonstrated distributing the dosimetry, and provided instructions to the emergency workers.

Objective 12, the ability to initially alert the public within the 10-mile EPZ and begin dissemination of an instructional message within 15 minutes of a decision, was adequately demonstrated as applicable to municipal responsibilities.

Objective 16, the ability to make the decision to recommend the use of KI to emergency workers and institutionalized persons based on predetermined criteria, as well as to distribute and administer it once the decision is made, if necessitated by radioiodine releases, was adequately demonstrated at the Township. The delivery of KI by the County was simulated; the Radiological Officer properly instructed emergency workers regarding procedures for its use.

Objective 18, the ability and resources necessary to implement appropriate protective actions for the impacted permanent and transient plume EPZ population (including transit-dependent persons, special needs populations, handicapped persons and institutionalized persons) was adequately demonstrated.

Objective 20, the organizational ability and resources necessary to control evacuation traffic flow and to control access to evacuated and sheltered areas was adequately demonstrated.

NEWBERRY TOWNSHIP EOC

Objective 1, the ability to monitor, understand and use emergency classification levels (ECLs) through the appropriate implementation of emergency functions and activities corresponding to ECLs as required by the scenario, was adequately demonstrated.

Objective 2, the ability to fully alert, mobilize and activate EOC personnel was adequately demonstrated.

Objective 3, the ability to direct, coordinate and control emergency activities was adequately demonstrated. The EMC demonstrated effective leadership. Staff members were knowledgeable, performed their tasks fully, and worked well together as a team.

Objective 4, the ability to communicate with all appropriate locations, organizations, and field personnel was adequately demonstrated. The Township's primary communications systems functioned properly without problems. However, a RACES operator never arrived to provide backup radio capability; the County EOC reported that no operators were available.

Objective 5, the facilities, equipment, displays and other materials to support emergency operations was adequately demonstrated. The EOC lacked running water however, and more importantly, a source of backup electrical power.

Objective 6, the ability to continuously monitor and control emergency worker exposure was adequately demonstrated. Sufficient dosimeters were available. Emergency workers were properly instructed regarding exposure control procedures by the Radiological Officer.

Objective 12, appropriate measures to initially alert the public within the 10-mile EPZ and begin dissemination of an instructional message within 15 minutes of a decision was adequately demonstrated by Township officials. Route alerting and the associated special notification requirement were properly performed, in accordance with the plan and procedures, and instructions from the County EOC.

Objective 16, the ability to make the decision to recommend the use of KI to emergency workers and institutionalized persons based on predetermined criteria, as well as to distribute and administer it once the decision is made, if necessitated by radiiodine releases, was adequately demonstrated.

Objective 18, the ability and resources necessary to implement appropriate protective actions for the impacted permanent and transient plume EPZ population (including transit-dependent persons, special needs populations, handicapped persons and institutionalized persons), was adequately demonstrated.

Objective 20, the organizational ability and resources necessary to control evacuation traffic flow and to control access to evacuated and sheltered areas was adequately demonstrated.

NORTHEASTERN EOC (EAST MANCHESTER TWSP., MANCHESTER BOR., MOUNT WOLF BOR.)

Objective 1, the ability to monitor, understand and use emergency classification levels (ECLs) through the appropriate implementation of emergency functions and activities corresponding to ECLs as required by the scenario, was adequately demonstrated.

Objective 2, the ability to fully alert, mobilize and activate EOC personnel was adequately demonstrated.

Objective 3, the ability to direct, coordinate and control emergency activities was adequately demonstrated by the EMC and staff.

Objective 4, the ability to communicate with all appropriate locations, organizations, and field personnel was adequately demonstrated. The comprehensive communications systems functioned well, with no problems or delays. RACES provided a secondary radio link.

Objective 5, the facilities, equipment, displays and other materials to support emergency operations, was adequately demonstrated. The EOC was an excellent, fully equipped facility which included facsimile and photocopy machines.

Objective 6, the ability to continuously monitor and control emergency worker exposure was adequately demonstrated. Sufficient exposure control equipment was available; the Radiological Officer was knowledgeable; emergency workers were properly instructed regarding procedures.

Objective 12, appropriate measures to initially alert the public within the 10-mile EPZ and begin dissemination of an instructional message within 15 minutes of a decision was adequately demonstrated as applicable to municipal responsibilities.

Objective 16, the ability to make the decision to recommend the use of KI to emergency workers and institutionalized persons based on predetermined criteria, as well as to distribute and administer it once the decision is made, if necessitated by radioiodine releases, was adequately demonstrated at the Township EOC.

Objective 18, the ability and resources necessary to implement appropriate protective actions for the impacted permanent and transient plume EPZ population (including transit-dependent persons, special needs populations, handicapped persons and institutionalized persons), was adequately demonstrated. Lists of special needs residents were contacted to verify information, while suitable vehicle needs were identified and coordinated with the County EOC.

Objective 20, the organizational ability and resources necessary to control evacuation traffic flow and to control access to evacuated and sheltered areas, was adequately demonstrated. One TCP was manned by a traffic controller who was thoroughly briefed at the EOC prior to his dispatch.

SPRINGETTSBURY TOWNSHIP EOC

Objective 1, the ability to monitor, understand and use emergency classification levels (ECLs) through the appropriate implementation of emergency functions and activities corresponding to ECLs, as required by the scenario, was adequately demonstrated.

Objective 2, the ability to fully alert, mobilize and activate EOC personnel, was adequately demonstrated. All EOC positions were staffed in a timely manner. The staff included members of the Board of Supervisors.

Objective 3, the ability to direct, coordinate and control emergency activities was adequately demonstrated. The EMC demonstrated effective management of the response activities, and the staff members were adequately trained and knowledgeable of their respective duties.

Objective 4, the ability to communicate with all appropriate locations, organizations, and field personnel was adequately demonstrated. The EOC had sufficient communication means to support emergency operations. Despite several requests to the County EOC, however, a RACES operator never arrived to provide backup radio capability.

Objective 5, the facilities, equipment, displays and other materials to support emergency operations was adequately demonstrated.

Objective 6, the ability to continuously monitor and control emergency worker exposure was adequately demonstrated. The Radiological Officer demonstrated the distribution procedure for emergency workers, and provided excellent instructions regarding exposure control. Although both the County and Township plans indicate that 65 sets of self reading dosimeters have been pre-distributed to the municipality, the Township requested additional sets. The municipality's actual needs should be reevaluated; both plans should be revised to indicate this additional need, if necessary.

Objective 12, the ability to initially alert the public within the 10-mile EPZ and begin dissemination of an instructional message within 15 minutes of a decision, was demonstrated by Township officials. Backup route alerting was properly demonstrated. One route alert team was dispatched, following a thorough briefing at the EOC prior to their departure.

Objective 16, the ability to make the decision to recommend the use of KI to emergency workers and institutionalized persons based on predetermined criteria, as well as to distribute and administer it once the decision is made, if necessitated by radioiodine releases, was adequately demonstrated at the Township.

Objective 18, the ability and resources necessary to implement appropriate protective actions for the impacted permanent and transient plume EPZ population (including transit-dependent persons, special needs populations, handicapped persons and institutionalized persons) was adequately demonstrated. Township officials had determined that there are no transit-dependent or special-needs residents within the plume EPZ portion of the Township.

Objective 20, the organizational ability and resources necessary to control evacuation traffic flow and to control access to evacuated and sheltered areas, was adequately demonstrated. An excellent briefing was conducted at the EOC for police officers assigned to traffic and access control duty, prior to their deployment. Three control points were actually manned.

WARRINGTON TOWNSHIP EOC

Objective 1, the ability to monitor, understand and use emergency classification levels (ECLs) through the appropriate implementation of emergency functions and activities corresponding to ECLs as required by the scenario, was adequately demonstrated by the Emergency Management Coordinator (EMC) and staff.

Objective 2, the ability to fully alert, mobilize and activate EOC personnel, was adequately demonstrated.

Objective 3, the ability to direct, coordinate and control emergency activities was adequately demonstrated.

Objective 4, the ability to communicate with all appropriate locations, organizations, and field personnel was adequately demonstrated. The primary systems, telephone and emergency management radio, operated without problem. RACES provided a backup radio system.

Objective 5, the facilities, equipment, displays and other materials to support emergency operations, was adequately demonstrated.

Objective 6, the ability to continuously monitor and control emergency worker exposure was adequately demonstrated. The EOC had sufficient dosimeters, while delivery of the required TLDs and KI from the county was simulated. The Radiological Officer demonstrated the proper distribution procedure, and provided thorough instructions to the emergency workers.

Objective 12, the ability to initially alert the public within the 10-mile EPZ and begin dissemination of an instructional message within 15 minutes of a decision, was demonstrated by Township officials. Route alert teams were dispatched in accordance with the plan, and had an appropriate written message.

Objective 16, the ability to make the decision to recommend the use of KI to emergency workers and institutionalized persons based on predetermined criteria, as well as to distribute and administer it once the decision is made, if necessitated by radiiodine releases, was demonstrated at the Township. The County simulated delivering the KI. The Township Radiological Officer demonstrated the distribution procedure, and properly instructed emergency workers regarding procedures for its use.

Objective 18, the ability and resources necessary to implement appropriate protective actions for the impacted permanent and transient plume EPZ population (including transit-dependent persons, special needs populations, handicapped persons and institutionalized persons) was adequately demonstrated. The EOC staff notified special facilities, and arranged with the County

EOC for appropriate vehicles for residents identified as having special transportation needs.

YORK HAVEN BOROUGH EOC

Objective 1, the ability to monitor, understand and use emergency classification levels (ECLs) through the appropriate implementation of emergency functions and activities corresponding to ECLs as required by the scenario, was adequately demonstrated.

Objective 2, the ability to fully alert, mobilize and activate EOC personnel was adequately demonstrated.

Objective 3, the ability to direct, coordinate and control emergency activities was adequately demonstrated. The EMC and deputy demonstrated effective leadership, and the staff were well-prepared to perform their assigned duties.

Objective 4, the ability to communicate with all appropriate locations, organizations, and field personnel was adequately demonstrated. The Borough's primary communications systems functioned properly and without problem. However, despite several requests to the County EOC, a RACES operator never arrived to provide backup radio capability.

Objective 5, the facilities, equipment, displays and other materials to support emergency operations was adequately demonstrated. The EOC was well-equipped, and included facsimile and photocopy machines.

Objective 6, the ability to continuously monitor and control emergency worker exposure was adequately demonstrated. The EOC had sufficient dosimeters, and delivery of the necessary TLDs and KI was simulated by the County. The Radiological Officer demonstrated the distribution procedure, and provided complete instructions to emergency workers.

Objective 12, the ability to initially alert the public within the 10-mile EPZ and begin dissemination of an instructional message within 15 minutes of a decision, was adequately demonstrated as applicable to a municipal EOC.

Objective 16, the ability to make the decision to recommend the use of KI to emergency workers and institutionalized persons based on predetermined criteria, as well as to distribute and administer it once the decision is made, if necessitated by radioiodine releases, was adequately demonstrated. The emergency workers were issued KI (simulated) and the Radiological Officer had the proper knowledge regarding procedures for its use, which was authorized in accordance with the plan.

Objective 18, the ability and resources necessary to implement appropriate protective actions for the impacted permanent and transient plume EPZ population (including transit-dependent persons, special needs populations, handicapped persons and

institutionalized persons) was adequately demonstrated. Those needing assistance had been identified, and arrangements for appropriate vehicles were properly coordinated with the County EOC.

Objective 20, the organizational ability and resources necessary to control evacuation traffic flow and to control access to evacuated and sheltered areas was adequately demonstrated. The staff demonstrated the activation of four TCP/ACP points. Those manning the posts were briefed at the EOC prior to dispatch.

3. SUPPORT COUNTIES

ADAMS COUNTY EOC, RECEPTION AND MASS CARE CENTERS

Objective 1, the ability to monitor, understand and use Emergency Classification Levels, was adequately demonstrated by the Adams County EOC.

Objective 2, the ability to fully alert, mobilize and activate personnel for both the Emergency Operations Center and field locations, was adequately demonstrated.

Objective 4, the ability to communicate with all appropriate locations, organizations and field personnel, was adequately demonstrated. County response functions were supported by RACES, telefax, commercial phone, and teletype.

Objective 6, the ability to continuously monitor and control emergency worker exposure, was adequately demonstrated. Personnel anti-contamination measures for the monitoring/decon team at the Gettysburg Senior High School Mass Care Center included plastic clothing, gloves, and boots.

Objective 21, procedures, facilities, equipment and personnel for the registration, radiological monitoring and decontamination of evacuees, was adequately demonstrated. Evacuees, pets, and vehicles were monitored at the mass care center upon their arrival from the Abbotstown Fire Station Reception Center. Effective measures were taken to assure the containment of contamination, including the use of plastic sheeting and drop cloths. Contaminated clothing was gathered and replaced, while evacuees whose contamination exceeded the plan designated trigger level were directed to showers.

Objective 22, facilities, equipment and personnel for congregate care of evacuees, was adequately demonstrated. Red Cross personnel effectively managed mass care center operations.

INGESTION EXPOSURE PATHWAY

Objective 30, the ability to implement both preventative and emergency protective actions for Ingestion Pathway hazards, was adequately demonstrated. Agricultural data including lists of dairy farms, egg and poultry farms, milk processing plants, and orchards were available in the County to support Ingestion Pathway measures. The County EOC took measures to assure any necessary interdiction in the processing and distribution of the County's substantial apple, honey, and pumpkin crops would be accomplished, if so directed by the State EOC. (No specific protective actions were recommended for Adams County during the exercise.)

BERKS COUNTY EOC, RECEPTION AND MASS CARE CENTERS

Objective 1, the ability to monitor, understand and use Emergency Classification Levels, was adequately demonstrated.

Objective 2, the ability to fully alert, mobilize and activate personnel for both the Emergency Operations Center (EOC) and field locations, was adequately demonstrated.

Objective 4, the ability to communicate with all appropriate locations, organizations and field personnel, was adequately demonstrated.

Objective 6, the ability to continuously monitor and control emergency worker exposure, was adequately demonstrated by the mass care monitoring/decontamination teams.

Objective 20, procedures, facilities, equipment and personnel for the registration, radiological monitoring and decontamination of evacuees demonstrated at the mass care center was demonstrated in an outstanding manner. The mass care operation was well organized and staffed.

Objective 22, facilities, equipment and personnel for congregate care of evacuees, was adequately demonstrated. Congregate care measures were conducted in a timely and responsible manner, and included the provision of crisis counseling and a nursing station.

INGESTION EXPOSURE PATHWAY

Objective 30, the ability to implement both preventative and emergency protective actions for Ingestion Pathway hazards, was adequately demonstrated. While no specific protective action recommendations were made for Berks County, questioning of the EOC staff during the Ingestion Pathway Phase of the exercise revealed that the County would effectively implement protective measures through the use of the EBS and a phone chain supported by the Dairy Herd Improvement Association. Such protective measures would be supported by the County's adequate maintenance of such agricultural information as data on dairy farms, dairy processing centers, meat and poultry producers, fruit growers, grain producers, and water resources.

FRANKLIN COUNTY EOC, RECEPTION AND MASS CARE CENTERS

Objective 1, the ability to monitor, understand and use Emergency Classification Levels, was adequately demonstrated by the Franklin County EOC.

Objective 2, the ability to fully alert, mobilize and activate personnel for both the Emergency Operations Center and field locations, was adequately demonstrated.

Objective 4, the ability to communicate with all appropriate locations, organizations and field personnel, was adequately demonstrated. The EOC is collocated with the Sheriffs Office Communications Center, and thereby supported by "state of the art" communications equipment. RACES effectively served as a primary communications link between the EOC and reception and mass care centers.

Objective 6, the ability to continuously monitor and control emergency worker exposure, was adequately demonstrated. The emergency worker exposure control procedures utilized during the exercise, however, were not in accordance with plan directives. The monitoring/decon team members were not aware of the County procedures requiring their reading of personal dosimetry every half-hour, or the necessity to request authorization from the County EMA to exceed 5 REMS (page E-71 of the Franklin County EOP). Instead, the County Radiation Officer stated that he would maintain logs for team members by contacting them approximately every hour to record their readings.

Objective 21, procedures, facilities, equipment and personnel for the registration, radiological monitoring and decontamination of evacuees, was adequately demonstrated at the Scotland School Mass Care Center.

Objective 22, facilities, equipment and personnel for congregate care of evacuees, was adequately demonstrated.

INGESTION EXPOSURE PATHWAY

Objective 30, the ability to implement both preventative and emergency protective actions for Ingestion Pathway hazards, was adequately demonstrated. County agricultural officials had sufficient information to enable the interdiction of food commodities at farms and processing facilities. During the Ingestion Phase of the exercise the County EOC verified the ability to notify the agricultural community of necessary instructions and State directives. (No specific protective actions were recommended for Franklin County by the State EOC during the Ingestion Pathway Phase of the exercise.)

NORTHUMBERLAND COUNTY EOC AND MASS CARE CENTER

Objective 1, the ability to monitor, understand and use Emergency Classification Levels, was adequately demonstrated.

Objective 2, the ability to fully alert, mobilize and activate personnel for both the Emergency Operations Center and field locations, was adequately demonstrated.

Objective 4, the ability to communicate with all appropriate locations, organizations and field personnel, was adequately demonstrated.

Objective 6, the ability to continuously monitor and control emergency worker exposure, was adequately demonstrated by the monitoring/decontamination team members.

Objective 21, procedures, facilities, equipment and personnel for the registration, radiological monitoring, and decontamination of evacuees, was adequately demonstrated at the Milton High School Mass Care Center. The CDV 700 survey meters utilized at the Mass Care Center, however, contained no markings (outside or inside the casing) identifying the last date of calibration.

Objective 22, facilities, equipment and personnel for congregate care of evacuees, was adequately demonstrated.

INGESTION EXPOSURE PATHWAY

Objective 30, the ability to implement both preventative and emergency protective actions for Ingestion Pathway hazards, was adequately demonstrated. The County Emergency Board assured the availability of lists of County food processing/distribution centers, feed and seed storage centers, dairy farm locations, meat and poultry producers, and water resources. The participating County officials manifested a thorough understanding of Ingestion Pathway measures as applicable to County responsibilities. (No specific protective actions were recommended for Northumberland County during the exercise.)

SCHUYLKILL COUNTY EOC, RECEPTION AND MASS CARE CENTERS

Objective 1, the ability to monitor, understand and use Emergency Classification Levels, was adequately demonstrated.

Objective 2, the ability to fully alert, mobilize and activate personnel for both the Emergency Operations Center and field locations, was adequately demonstrated.

Objective 4, the ability to communicate with all appropriate locations, organizations and field personnel, was adequately demonstrated. All communication systems functioned properly without any breakdowns. RACES support of operations was especially effective.

Objective 6, the ability to continuously monitor and control emergency worker exposure, was adequately demonstrated.

Objective 21, procedures, facilities, equipment and personnel for the registration, radiological monitoring and decontamination of evacuees, was adequately demonstrated. Monitoring/decontamination

teams comprising fire personnel followed plan procedures. Measures were taken to assure the containment of contamination.

Objective 22, facilities, equipment and personnel for congregate care of evacuees, was adequately demonstrated. Red Cross personnel effectively organized the provision of food, sleeping facilities, and health care for evacuees.

INGESTION EXPOSURE PATHWAY

Objective 30, the ability to implement both preventative and emergency protective actions for Ingestion Pathway hazards, was adequately demonstrated. The participating County officials thoroughly discussed procedures for forwarding instructions from the State EOC to County farmers, food processing and distribution centers, and the general public. Members of the County Emergency Board reviewed their computer provided data on farms and agricultural products in the County, which included addresses, phone numbers, and herd sizes. Information on meat and poultry producers, fruit growers, and water resources was also available to support Ingestion Pathway protective measures. (No specific protective actions were recommended for Schuylkill County during the Ingestion Pathway Phase of the exercise.)

SNYDER COUNTY EOC, RECEPTION AND MASS CARE CENTERS

Objective 1, the ability to monitor, understand and use Emergency Classification Levels, was adequately demonstrated.

Objective 2, the ability to fully alert, mobilize and activate personnel for both the Emergency Operations Center and field locations, was adequately demonstrated.

Objective 4, the ability to communicate with all appropriate locations, organizations and field personnel, was adequately demonstrated. Communications during the exercise, including RACES, were excellent and effectively supported County response activities.

Objective 6, the ability to continuously monitor and control emergency worker exposure, was adequately demonstrated.

Objective 21, procedures, facilities, equipment and personnel for the registration, radiological monitoring and decontamination of evacuees, was adequately demonstrated. The demonstration of decontamination procedures, however, was problematic. The emergency worker in charge of the monitoring/decontamination team at the reception center was not aware of the plan designated contamination trigger level (0.1 mR/hr above background as stated on page E-53 of the Snyder County EOP), and admitted that he was in need of refresher training. The County EMC also indicated that the County is in short supply of such items as plastic sheeting,

protective clothing, rope, etc., needed to assure an effective evacuee decontamination function in the event of a real incident.

Objective 22, facilities, equipment and personnel for congregate care of evacuees, was adequately demonstrated. The Susquehanna University Gym complex readily supports the provision of congregate care to evacuees. The mass care operation was well managed, and included the provision of crises counseling and the services of a Registered Nurse.

INGESTION EXPOSURE PATHWAY

Objective 30, the ability to implement both preventative and emergency protective actions for Ingestion Pathway hazards, was adequately demonstrated. Computerized agricultural information such as lists of farmers, food processors, and water suppliers, was available through the County Extension Agent to support County Ingestion Pathway measures. The County discussed vehicles by which instructions would be forwarded to farmers and the public including the EBS, public service announcements on local radio and TV, print media, and a personal contact system comprising local community Committeemen. (No specific protective actions were recommended by the State EOC for Snyder County during the exercise.)

4. REMAINING COUNTIES WITHIN THE INGESTION PATHWAY EPZ

CHESTER COUNTY EOC

Objective 30, the ability to implement both preventative and emergency protective actions for Ingestion Pathway hazards, was adequately demonstrated. The EOC was adequately staffed by an EMC, PIO, Police Representative, Fire Representative, Agricultural Extension agent, EMS representative and Radiological Officer. Complete records of dairy, food processing and distribution centers, and water purveyors were made available for County decisions by the participating member of the ASCS. Although no protective actions were recommended for Chester County during the exercise, potential actions to assure the interdiction of the transport of contaminated food products were discussed in the EOC, while appropriate precautionary messages were formulated for EBS broadcast to advise the general public of Ingestion Pathway matters.

COLUMBIA COUNTY EOC

Objective 30, the ability to implement both preventative and emergency protective actions for Ingestion Pathway hazards, was adequately demonstrated. The EOC was fully staffed and operational during the Ingestion Pathway Phase of the exercise. County response activities were supported by effective communications systems. Although no specific protective actions were recommended for the County during the exercise, the EOC staff fully discussed and explained how farmers would be contacted and instructed in the event of a real incident. Adequate agricultural information is maintained by the County Agricultural Extension Office to support the implementation of protective measures addressing the Ingestion Exposure Pathway.

JUNIATA COUNTY EOC

Objective 30, the ability to implement both preventative and emergency protective actions for Ingestion Pathway hazards, was adequately demonstrated. Staffing was adequate in the EOC to enable an effective response during the exercise. Information on dairy farms, poultry farms, fruit growers, crop production and acreage, food processing plants, and water resources was available in the County. Effective communications assured the ability of the County to receive and carry out instructions from the State EOC.

Although the participating officials were very knowledgeable regarding the food pathways in the County, no one in the EOC was familiar to any extent with the preventative and emergency Protective Action Guidelines and corresponding actions for milk, fruits, and drinking water. A general familiarity with, and understanding of these matters will serve to assure the successful implementation of Ingestion Pathway protective measures. (No

protective actions were recommended for Juniata County during the exercise.)

MIFFLIN COUNTY EOC

Objective 30, the ability to implement both preventative and emergency protective actions for Ingestion Pathway hazards, was adequately demonstrated. No specific preventative or emergency protective actions were recommended for this County during the exercise. The County did demonstrate the ability to convey emergency information to the public by simulating an EBS message based on information received from a PEMA teletype dispatch. The use of the teletype rather than telephone as a primary communications link with PEMA did result in some message delays. Furthermore, no copies of PEMA press releases were forwarded to the County during the Ingestion Phase of the exercise. (See Objective #4 under the State EOC.)

Information was available from the ASCS Office regarding locations and phone numbers of farms, food processors, feed and seed facilities, fruit growers, and grain producers.

PERRY COUNTY EOC

Objective 30, the ability to implement both preventative and emergency protective actions for Ingestion Pathway hazards, was adequately demonstrated. No specific preventative or emergency protective actions were recommended for Perry County during the Ingestion Phase of the exercise. Necessary information regarding related agricultural matters was available in a computer data base maintained by the ASCS Office. EOC discussions on hypothetical County interdiction processes for the agricultural food pathway indicated an adequate knowledge of ingestion exposure hazards on part of the participating officials.

B. SUMMARY LIST OF ISSUES

The issues listed for each evaluated location or activity have been summarized and classified according to the following categories:

Deficiencies are demonstrated and observed inadequacies that cause a finding that offsite emergency preparedness was not adequate to provide reasonable assurance that appropriate protective measures can be taken to protect the health and safety of the public living in the vicinity of the Three Mile Island Nuclear Station in the event of a radiological emergency. Because of the potential impact of deficiencies on emergency preparedness, they are required to be promptly corrected through appropriate remedial actions including remedial exercises, drills or other actions. There was one deficiency identified during this exercise, that being the failure of the Commonwealth and certain risk counties to adequately demonstrate the ability to initially alert the public within the 10-mile EPZ and begin dissemination of an instructional message within 15 minutes of a decision by the appropriate State official.

Areas Requiring Corrective Action are demonstrated and observed inadequacies of performance, and although their correction is required during the next scheduled biennial exercise, they are not considered, by themselves, to adversely impact public health and safety. There were 30 Areas Requiring Corrective Action identified during this exercise.

Areas Recommended for Improvement are problem areas observed during an exercise that are not considered to adversely impact public health and safety. While not required, correction of these would enhance an organizations level of emergency preparedness. There were 25 Areas Recommended for Improvement identified during this exercise.

DEFICIENCY

Problem ID	Location/Activity	NUREG Element	Proposed Correction Date	Confirmed Correction Date
TMIX89-1D	State EOC, Cumberland, Dauphin and Lancaster Counties	E.6	02/07/90	02/07/90

The initial alert and notification for the public within the 10-mile EPZ via the sounding of sirens and activation of EBS broadcasts were not accomplished within 15 minutes of the decision in the State EOC, as required by NUREG-0654, FEMA-REP-1, REV. 1, Appendix 3, page 3-3, as well as FEMA-REP-10, page E-5, and Annex E to the Commonwealth of Pennsylvania Emergency Operations Plan, Appendix 3, pages 3-2 and 3-6. The decision to sound sirens and activate the EBS was made in the State EOC at 1930 hours. The message forwarded from the State EOC to the risk counties via the dedicated line indicated that sirens would be activated at 1944 hours, but did not specify an activation time for the EBS broadcast. As a consequence, Lancaster County did not begin dissemination of an EBS message until 1947 hours, after sounding its sirens for three minutes.

Cumberland County delayed both its siren and EBS activation until 1957 hours, as evidenced by the County Exercise Events Log. This delay was partially due to the fact that the dedicated line and Fire Radio Net are located in a Communications Center remote from the EOC.

Dauphin County properly followed its procedures with regard to the initial alert and notification of the public, and attempted to begin the EBS broadcast immediately after siren activation at 1944 hours, but was frustrated by a technical/procedural problem on part of its lead EBS radio station, WHP. As a consequence, the EBS broadcast was not initiated until 2002 hours.

It is recommended that the directive from the State EOC to the risk counties regarding the initial alert and notification of the public include specific target times for both siren activation and the EBS broadcast. Ideally, the target time for the EBS broadcast will provide a buffer from the siren activation time, allowing residents a reasonable amount of time to get to their radios and tune in to the appropriate EBS station before the message begins.

Correction of this deficiency mandates the conduct of a remedial exercise including participation by the State EOC, Lancaster County EOC and Cumberland County EOC. Correction of the deficiency also requires certification from the WHP administration guaranteeing that the radio station has taken action to correct any related technical/procedural problems, and will be prepared to broadcast the provided EBS message (on a 24 hour basis) when requested to do so by Dauphin County.
(Objective #12)

State Response:

The Cumberland County Deficiency was contributed to by the physical separation of some two miles between the communications center in the Court House and the EOC at the county prison. The situation was further exacerbated by questions regarding the reason for the siren activation from a municipality. The completion of a long term project to collocate the communications center at and with the EOC was completed by March 13, 1990. The successful retest of the initial alert and notification process was conducted with FEMA in attendance on February 7, 1990.

Lancaster was not at fault in the deficiency regarding the alert and notification process and deserves no criticism or deficiency in that regard. The county performed as it should have and is an innocent victim of the situation. The county did of course have to participate in the retest to ensure its successful completion. This was concluded on February 7, 1990 during the PBAPS exercise.

Dauphin County also had no deficiency per se. The primary EBS station activated its tone and played a canned test message at the proper time. The live broadcast of instructions from the responsible county commissioner was, however, delayed until 8:02 p.m. A meeting was held with radio station WHP by Carl Kuehn, FEMA Deputy Director (Noted in correspondence of January 31, 1990, provided under separate cover) on February 8, 1990. At that time the following actions were taken:

- a. WHP withdraw as the principal state CPCS - 1 station
- b. WITF (Pennsylvania Public Television Network (PPTN)) accepted that responsibility
- c. WHP agreed to remain as a CPCS - 1 Relay A station

Also see the attached letter from John Eby WHP station manager.

On April 6, 1990 at approximately 10:15 a.m. a statewide EBS test was held and WHP participated as a CPCS - 1 Relay A Station. The outcome was excellent. We believe this situation has now been rectified.

FEMA RESPONSE: The performance of the Cumberland County EOC, Lancaster County EOC, and State EOC during a remedial exercise conducted on February 7, 1990, adequately demonstrated the ability of these jurisdictions to initially alert the public within the 10-mile EPZ and begin dissemination of an instructional message within 15 minutes of a decision by appropriate State officials. The successful conduct of this remedial exercise, coupled

with the measures taken to assure the immediate broadcast of an EBS message upon request by the Dauphin County EOC (i.e., replacement of the WHP radio station with WITF as the principle CPCS), render this deficiency as resolved.

AREA REQUIRING CORRECTIVE ACTION

Problem ID	Location/Activity	NUREG Element	Proposed Correction Date	Confirmed Correction Date
TMIX89-1R	State EOC	J.9,11	Continuous	

A key agricultural protective action was not effectively coordinated by the State EOC with the risk counties. At 1930 hours, the Pennsylvania Department of Agriculture issued an advisory for farmers in northwestern Lancaster County and extreme southern Dauphin County (living within five-miles of the nuclear station) to remove all farm animals from pastures and place them under shelter. Neither Dauphin County nor Lancaster County received this advisory.

The Agricultural Extension Agent in Dauphin County had contacted the State EOC at 1905 hours and questioned at that time whether sheltering of farm animals should be implemented in Dauphin County. The State EOC did not answer the Agent's question as of 2107, when the Agent contacted the State EOC a second time still seeking advice on whether to shelter livestock. The Lancaster County Agricultural Extension Agent independently developed precautionary protective actions for livestock at 1855 hours.

Annex E to the Commonwealth EOP states that protective actions are to be coordinated through the State EOC (page E-11, paragraph 5.B.4). Annex E further states that emergency response relevant to agricultural matters are to "be coordinated through the State EOC by the Pennsylvania Department of Agriculture and the State Emergency Board..." (page E-13, paragraph 3.a). Coordination of protective actions can not be accomplished without their direct and timely communication to the risk county EOCs. (Objective #3)

State Response:

A procedural breakdown occurred in this instance between the Department of Agriculture, the PEMA press office, the PEMA communication center and the EOC. Continuous briefing and repeated exercises will be the training ground. During the Peach Bottom exercise of February 7, 1990 this issue was given more attention and there were no problems in this regard.

AREA REQUIRING CORRECTIVE ACTION

Problem ID	Location/Activity	NUREG Element	Proposed Correction Date	Confirmed Correction Date
TMIX89-2R	State EOC	J.9	Continuous	

The message containing the evacuation protective action forwarded from the State EOC to the risk county EOCs via the dedicated line stated that the Governor "authorized a simulated evacuation out to 10 miles from TMI." The use of the word "authorized" caused some confusion at Dauphin County, where the EOC staff engaged in a discussion over whether the hotline message constituted an order or left the evacuation to County discretion. The confusion was eventually cleared up by a call from the County to the State EOC at 2045 hours, where the message was amended to read "the Governor orders an evacuation." Similarly, the content of the State EOC message regarding the ingestion of KI by emergency workers (worded as KI should be "issued" to emergency workers) at 2110 hours to Cumberland County resulted in a need for clarification. Key protective action messages should be conveyed over the dedicated line in concise, standardized terminology. (Objective #3)

State Response:

EOC staff personnel and Emergency Preparedness Liaison Officers (EPLO) have received additional training on protective action message preparation and dissemination procedures emphasizing concise, standard terminology use. Standard wording for evacuation and KI advisories have been developed.

AREA REQUIRING CORRECTIVE ACTION

Problem ID	Location/Activity	NUREG Element	Proposed Correction Date	Confirmed Correction Date
TMIX89-3R	State EOC	F.1.b	Continuous	

Communications with the participating county EOCs during the Ingestion Pathway Phase of the exercise were complicated by the fact that no direct link was established between the State EOC and Juniata or Mifflin Counties. Instead, the State EOC utilized the PEMA Area Office as a "go between" to these counties for communications. This lack of a direct link may have contributed to the fact that a key press release generated by PEMA did not reach Mifflin County. Communications were further complicated during the Ingestion Phase by use of the telefax as a primary communication means to the participating counties. The telefax was enhanced by use of a programmed, automated sequential call down of the 14 counties and two Area Offices. Despite this enhancement, fax messages were often delayed by 30 minutes for those locations near the bottom of the call down sequence. Given the fact of these unavoidable hard copy message delays, and the lack of a direct State link with two of the Ingestion Pathway counties, it is recommended that key messages between the State EOC and the counties transmitted primarily via telefax or teletype be accompanied by notice of their pending arrival by phone calls from the State EOC. (Objective #4)

State Response:

PEMA policy is to transmit information to ingestion and support counties through the area offices which are responsible to coordinate support and ingestion county activities. This procedure works well during disaster operations and, in the past, provided counties with information in a timely manner. Each of the area offices have reviewed their operating procedures and are currently in conformance with information processing procedures. Counties will be notified by telephone first and followed up with a hard copy fax on all actions or incidents requiring immediate transmittal.

AREA REQUIRING CORRECTIVE ACTION

Problem ID	Location/Activity	NUREG Element	Proposed Correction Date	Confirmed Correction Date
TMIX89-4R	State Media Center	G.1,3.a	Continuous	

Coordination and accuracy were lacking with regard to certain press releases issued by the State EOC public information team. The Commonwealth News Release #1 (1808 hours) indicated that no radiation had been detected offsite as of the 6:00 PM plant status update, and that the plant was operating at 68% capacity when the onsite leak was first detected. However, the GPU News Release #4 at 5:55 PM stated that "an offsite radiation monitor one-half mile east of the plant recorded an elevated radiation level of .2 millirems per hour," and also that the "plant had been operating at full power when an alert was declared at 4:32 PM today because of the reactor coolant leakage."

Although a detection of an elevated radiation level of .2 millirems per hour at only one monitor does not constitute a significant concern, the very fact of a public perception of reporting discrepancies could have significant impact on public confidence in State and local authorities in the stress-heightened environment of a radiation incident at Three Mile Island. Information in press releases disseminated by the Utility and State must be consistent.

A second instance where coordination was lacking involved a press release developed by the State PIO team on 10/19/89, which contained an incorrect location for the Dauphin County farmer emergency worker reentry permit distribution point. The Commonwealth press release, titled "State Teams Monitor Radiation Levels," identified this distribution point as the Paxton Township Building at 78 Houcks Road in Paxton Township. Dauphin County contacted the State EOC and advised that the actual location was the USDA County Office located at 1451 Peters Mountain Road in Dauphin (see Annex E to the Dauphin County EOP, page E-15-2). The State Team, however, did not follow up with a second press release advising farmers of this correction.

Annex E to the Commonwealth EOP. Appendix 16, page E-16-3, charges PEMA with the coordination of the Utility and State media centers, as well as overall public information processes. (Objective #14)

State Response:

There was an instance early on in the exercise where the press release by the state, while subsequent to a press release from the utility, was based on earlier information.

On October 19 the press operations were not fully manned and the proper coordination did not always take place to verify the information. When the county advised of the correct location, the press office chose not to issue

a correction because all the relevant players at the county and state level were aware of the correct information.

Continued training in, and emphasis on, coordination of information and clarification of the timeliness of the data upon which releases are made is and will be an area of priority concern.

On March 27, 1990 the Director of PEMA and Director of the Office of Plans and Preparedness met with the Director of the State Bureau of Radiation Protection and his key staff to review use of technology between the plants, state operators and public information staff. Use of standard forms for issues relating to leaks and releases is under consideration.

AREA REQUIRING CORRECTIVE ACTION

Problem ID	Location/Activity	NUREG Element	Proposed Correction Date	Confirmed Correction Date
TMIX89-5R	State EOC	J.10.f	10/24/89	

Actions on part of the BRP Incident Manager with regard to the ingestion of KI by BRP field teams clearly deviated from State plan prescriptions. The BRP Incident Manager independently made the decision to administer KI to BRP field team personnel at 2026, based upon dose projections and a sudden increase in release rates which indicated that the emergency worker PACs could be exceeded. This decision was forwarded to the BRP field teams at 2029. However, the Secretary of Health did not issue this recommendation until 2055 hours. Annex E to the Commonwealth of Pennsylvania Emergency Operations Plan, Appendix 5, page 5-33, clearly charges the Secretary of the Department of Health with the authority to recommend the ingestion of KI for emergency workers. Although the BRP Incident Manager is qualified to advise the Secretary of Health on KI ingestion matters, it is the latter who should issue the recommendation in a coordinated manner with the assistance of PEMA. (Objective #16)

State Response:

The Incident Manager was informed of the departure from procedure for recommending the taking of KI following the RAC oral critique of October 24, 1989 and the matter is considered to be corrected. Additional charts have been developed for distribution which present the decision making chain.

AREA REQUIRING CORRECTIVE ACTION

Problem ID	Location/Activity	NUREG Element	Proposed Correction Date	Confirmed Correction Date
TMIX89-6R	State EOC	J.9..0.j	Continuous	

One function central to reentry and recovery measures -- the establishment of restricted areas (areas suspected or confirmed to be impacted by deposition) -- was less than effective on part of the State EOC decision makers and Situation Analysis Group. The boundaries identified for the Elizabethtown restricted area and forwarded on 10/19/89 to the counties exceeded the 10-mile EPZ and encompassed parts of Lancaster County not evacuated during the Emergency Plume Phase. According to County estimates, approximately 11,000 residents were located in the part of the restricted area extending beyond the 10-mile EPZ. No actions addressing the fact that 11,000 residents remained inside the restricted area were taken until a conference call hosted by the State EOC at 1300 hours on 10/20/89, during which PEMA first became aware that the boundaries extended beyond the evacuated 10-mile zone.

Additionally, the use of Legislative Routes by the PEMA Situation Analysis Group for the delineation of restricted area boundaries was problematic for the Lancaster and Dauphin County EOC staffs, who found it necessary to translate them into road names more familiar to county and municipal personnel.

The establishment of restricted areas should involve extensive coordination between the counties and State EOC. (Objective #32)

State Response:

A problem exists with the lack of standardization of maps used by the state, counties and municipalities within the Commonwealth. The issue is being addressed by the Department of Transportation which is in the process of developing a digitized mapping system for the entire Commonwealth. In the interim, the nuclear utilities are developing common user maps for each risk county area.

The Situation Analysis group is aware of the need to, and the importance of, using specific identifiable boundaries for controlled and exclusion zones.

AREA REQUIRING CORRECTIVE ACTION

Problem ID	Location/Activity	NUREG Element	Proposed Correction Date	Confirmed Correction Date
TMIX89-7R	State EOC, Dauphin County EOC	J.9	June 1991	

Objective 35, the ability to coordinate the evacuation of onsite personnel, was not demonstrated during the exercise. Although personnel at the EOC were aware of the simulated onsite evacuation, no exercise play was observed addressing the evacuation of onsite personnel at either the State EOC or Dauphin County EOC. No message copies, logs, or EIS entries refer to the coordination of this evacuation between the State EOC and the Utility. (Objective #35)

State Response:

Unfortunately the exercise scenario did not drive an evacuation of onsite personnel and therefore was no fault on the part of any player at any level in this regard.

The procedure was successfully demonstrated during the Peach Bottom Exercise in February 1990 and Beaver Valley Exercise of May 1990.

FEMA Response: OBJECTIVE 35 should be rescheduled and demonstrated at the 1991 biennial full scale Three Mile Island REP Exercise.

AREA REQUIRING CORRECTIVE ACTION

Problem ID	Location/Activity	NUREG Element	Proposed Correction Date	Confirmed Correction Date
TMIX89-8R	BRP Field Monitoring Teams	1.8,9	10/18/89	

The BRP RAD 10 Team experienced equipment problems with their SAM II dual channel analyzer (SN # 5.2). The power cable for the instrument proved faulty and unreliable, while the instrument itself provided readings/counts that were too high. This instrument should be repaired. In the future, the SAM II instrument should be tested and iodine settings should be determined prior to team deployment. (Objective #8)

State Response:

The power cable was replaced on October 18, 1989. Instruments will be tested prior to deployment.

AREA REQUIRING CORRECTIVE ACTION

Problem ID	Location/Activity	NUREG Element	Proposed Correction Date	Confirmed Correction Date
TMIX89-9R	BRP Field Monitoring Team	I.8,9	01/19/90	

The RAD 10 Team experienced some difficulty at first when performing particulate filter field estimates. The team was not successful in obtaining an estimate following the GM method (see BRP Implementing Procedure 102, page 11). The instructions for the alternate SAM method contained in BRP Implementing Procedure 102, Section VII, A, (page 10) state that Window and Threshold settings do not matter. However, the field team was unable to obtain a sample count until the Window was placed out. Procedure step VII. A. 1. (e) should be revised so as to instruct the Team to set the Window "out." (Objective #9)

State Response:

Procedure DER/BRP/IP-102, Step VII.A.1.(e) was corrected and distributed to field monitoring teams on January 19, 1990.

AREA REQUIRING CORRECTIVE ACTION

Problem ID	Location/Activity	NUREG Element	Proposed Correction Date	Confirmed Correction Date
TMIX89-10R	DER LAB/ BRP	J.11	01/26/90	

Direction and guidance were lacking with regard to the prioritization of sample analyses. The order in which the Lab conducted analyses of the delivered samples was determined solely upon the basis of how "hot" they were, i.e., samples providing the highest readings when monitored upon their arrival were prioritized over samples giving lower readings. Commodity type, however, is also an important factor in the determination of a sample analysis queue. FEMA REP-12, "Guidance on Offsite Emergency Radiation Measurement Systems, Phase 2 -- The Milk Pathway," (page 2-2) identifies milk as the most critical food of the Ingestion Pathway with regard to potential radiation exposure. Annex E to the Commonwealth EOP also indicates the prioritization of milk over other agricultural commodities given the amplification and perishability factors involved (Appendix 6, page E-6-19). Annex E charges the Bureau of Radiation Protection with the responsibility to set analytic priorities (Appendix 6, page E-6-25). In the future, directives should be provided to the Lab to assure an optimal sample analyses priority. (Objective #28)

State Response:

A verbal directive was issued by the DER logistician to the Bureau of Laboratories through the BRP laboratory liaison when the samples were known to have been received by the laboratory. In the future, the directive will be made before the samples are delivered.

AREA REQUIRING CORRECTIVE ACTION

Problem ID	Location/Activity	NUREG Element	Proposed Correction Date	Confirmed Correction Date
TMIX89-11R	State EOC/Traffic Access and Control	J.10.J	Continuous	

No actions on part of the State EOC to restrict or control access to the Susquehanna River were observed, or are evidenced by any EIS or message log entries for 10/17/89. Annex E to the Commonwealth EOP (Appendix 20, pages E-20-2 through E-20-5) directs that the State EOC will contact the Pennsylvania Fish Commission to activate river ACPs (as necessary) during an incident at Three Mile Island. (Objective #20)

State Response:

The EOC did not activate the River ACP's. It was clearly a procedural failure.

The procedure will be watched more closely in the future.

AREA REQUIRING CORRECTIVE ACTION

Problem ID	Location/Activity	NUREG Element	Proposed Correction Date	Confirmed Correction Date
TMIX89-12R	Dauphin County EOC	K.4	03/17/90	

Questioning of the Radiological Officer revealed some lack of familiarity with County plan prescriptions. The Radiological Officer was not aware of the County emergency exposure control procedure which dictates that the County EMC must authorize exposures in excess of 5 REM (whole body) and only after certain conditions are met. (See Annex E to the County EOP, Appendix 13, pages E-13-32 to 33.) Further plan review and/or training is recommended for this EOC staff member. (Objective #6)

State Response:

The Radiological Officer was working with the new Annex E for the first time in an exercise. He was questioned about the specifics of the plan while he was engaged in executing other exercise tasks and responded from memory rather than referring to the procedure. He has already received additional training/review regarding the plan and attended formal all day training on March 17, 1990 at the annual REP training session. This of course will also be supplemented by additional training opportunities throughout each year.

AREA REQUIRING CORRECTIVE ACTION

Problem ID	Location/Activity	NUREG Element	Proposed Correction Date	Confirmed Correction Date
TMIX89-13R	Dauphin County EOC	J.10.d	03/15/90	

Confirmation of the transport needs of the nursing homes and hospitals by the Medical Services Officers, and verification of available ambulances by the Transportation Coordinator, indicated an unmet need of 98 ambulances in the County during the exercise. This number was unexpected and far exceeds the potential unmet ambulance needs indicated in the County plan. Sixty-three of these ambulances were requested by the Dauphin Manor, while Annex E to the County EOP (Appendix 7, page 7-10) indicates that no ambulances would be needed for the transport of the Manor's 521 clients. The ambulance requirements listed in the County plan should be formally reviewed, confirmed, and amended as needed. Necessary additional sources of ambulances should be identified and listed in Appendix 7.
(Objective #18)

State Response:

In a post exercise review it was determined that the request for ambulances was overstated. Only 67 not 98 would have been required. This of course is a change in itself since the nursing home had anticipated the use of busses not ambulances. A change in the number of residents from 521 to 427 and in the mix of type patients now results in a requirement of fewer busses but does add 67 ambulances. A planning meeting was held on March 15, 1990 to review and update the nursing home plan and in turn the county Annex E.

AREA REQUIRING CORRECTIVE ACTION

Problem ID	Location/Activity	NUREG Element	Proposed Correction Date	Confirmed Correction Date
TMIX89-14R	Conewago Twsp EOC (Dauphin County)	K.3.a, J.9.e	June 1990	

Although adequate supplies of Dosimetry and KI were available in the EOC during the exercise, the municipal EOP indicates an incorrect number of units for the EOC staff, listing 12 units while the staff comprise 17 people (including 5 personnel designated as Route Alert Team members). (See Attachment I-6, page I-17 of the SOPs for the Conewago Township EOP, and pages 4 through 7 of the Township Notification and Resource Manual.) The municipal plan should be amended to indicate the provision of adequate dosimetry and KI supplies (as mandated by SOP I, page I-5 of the Township Plan). (Objective #6)

State Response:

Seventeen units is not the correct number as some of these persons are listed more than once. However, the need for dosimetry will be reviewed and the municipal plan and county Annex E will be revised as necessary.

AREA REQUIRING CORRECTIVE ACTION

Problem ID	Location/Activity	NUREG Element	Proposed Correction Date	Confirmed Correction Date
TMIX89-15R	Lower Swatara Township EOC	D.4	1991	

The EOC staff misinterpreted the County EOC message received at 1940 hours relaying the Governor's declaration of a "State of Disaster Emergency," as the Utility's escalation to General Emergency. The staff initiated EOC activities normally triggered by the General Emergency escalation and continued to address functions assigned to this ECL for at least 15 minutes, when the Federal evaluator asked the EMC for an explanation of staff actions. Accurate monitoring of the four established ECLs is critical to effective response by the Township, as indicated by the Township plan where it states that "... the Response Actions for each member of a municipal EOC staff have ... been organized according to the four ECLs unique to a nuclear power plant incident" (page A-3, Standard Operating Procedures for Lower Swatara Township, August 1989). The EOC staff needs to review its plans and better its understanding of the operational distinction between the Governor's declaration of a State of Disaster Emergency and the Utility's declaration of General Emergency.
(Objective #1)

State Response:

Confusion did exist in the Township EOC and the staff did misinterpret the Governor's Declaration of a "State of Disaster Emergency" for an escalation to a general emergency ECL. More training will be provided to the EOC staff and consideration is being given to standardizing the presentation of the items, for example:

- a. "A State of Disaster Emergency has been declared by the Governor -
- "
- b. The Utility has announced an upgrade in the emergency classification level to a Site Area Emergency.

AREA REQUIRING CORRECTIVE ACTION

Problem ID	Location/Activity	NUREG Element	Proposed Correction Date	Confirmed Correction Date
TMIX89-16R	Middletown Borough/ Royalton Borough EOC	K.3.a	June 1991	

Only high range dosimeters (0-200 REM) were available in the EOC for emergency workers. The Joint Borough plan (page I-17) as well as Annex E to the Dauphin County EOP (page E-13-4) direct that emergency workers will be equipped with both high range and middle range (0-20 REM CD 730 or DCA 622) dosimeters. These dosimeters should be pre-distributed in the EOC. (Objective #6)

State Response:

The FEMA evaluator was shown the stored dosimetry which includes all required dosimetry. The dosimetry is all predistributed and was and is available. Perhaps the FEMA evaluator saw a box with external markings indicating CDV742 were inside and missed the boxes with CDV730/DCA622 dosimeters.

Since there is no corrective action required, request this item be removed from the final report.

FEMA Response: Region III acknowledges the possibility of evaluator error. The adequacy of dosimetry supplies at the Middletown Borough/Royalton Borough EOC will be confirmed during the 1991 Joint, Biennial Three Mile Island Exercise.

AREA REQUIRING CORRECTIVE ACTION

Problem ID	Location/Activity	NUREG Element	Proposed Correction Date	Confirmed Correction Date
TMIX89-17R	Swatara Twsp EOC	D.4	Continuous	

Announcement of the escalation to Site Area Emergency (which was received by the RACES operator only a few minutes after declaration) to the EOC staff was delayed for over one hour, and as a consequence, the corresponding staff activities that are triggered by this escalation were delayed as well. All ECL escalations should be brought immediately to the attention of the EMC, and then promptly announced in the EOC.
(Objective #1)

State Response:

Clearly a failure to follow established procedures. The EOC staff and RACES organizations were counseled on the importance of immediate information transfer to and among the EOC staff. This is an item of continuous training.

AREA REQUIRING CORRECTIVE ACTION

Problem ID	Location/Activity	NUREG Element	Proposed Correction Date	Confirmed Correction Date
TMIX89-18R	Swatara Twsp EOC	A.2.a	03/15/90	

The Township did not utilize the EOC Message Form provided in the Township plan (Attachment C-3, page C-6 of the Swatara Township SOP, July 1989). Utilization of this message form will enhance coordination of the Township's response, especially in light of the fact of the disjointed facilities that temporarily house emergency operations. (Objective #3)

State Response:

Municipal elected officials are taking a personal interest in resolving TMIX89-21 and 22R and is improving the coordinated emergency management planning response process in the municipality. The EOC Message form will be used. The new township EOC was dedicated in May 1990.

AREA REQUIRING CORRECTIVE ACTION

Problem ID	Location/Activity	NUREG Element	Proposed Correction Date	Confirmed Correction Date
TMIX89-19R	Elizabethtown Area School District	D.4,E.1	Sep 1993	

Two procedural problems were observed at the School district Office during the exercise. The District Business Manager misinterpreted the notification at 0845 hours from Lancaster County of a declaration of an Alert as notification of a General Emergency at Three Mile Island. Instead of questioning or verifying this declaration, the Business Manager advised the risk schools and the Johnson Bus Company dispatcher of this wrong emergency classification declaration.

The second procedural problem concerned the notification of the Manheim Township School District. The Elizabethtown Area School District failed to notify the Manheim Township District of the incident until 1030 hours when the evacuation protective action directive was received from the County. The Elizabethtown Area School District plan directs that the Manheim School District will be notified at the declaration of an Alert, Site Area and General Emergency classification (pages 5-6 of the December 1986 Elizabethtown Area School District RERP). It is recommended that the Elizabethtown Area School District staff review the District plan and better their understanding of response procedures. (Objective #10)

State Response:

The County Emergency Management Coordinator was present at the district with the FEMA evaluator and noted some confusion in communications between the evaluator and the district staff. The confusion may have been contributed to by the fact that the district staff was explaining the plan use and district actions simultaneous with the processing of the exercise information from the county EOC which in turn was not clearly received from PEMA. The District performed more than adequately.

Request this item be deleted from the final report.

FEMA Response: Region III acknowledges the possibility of unintentional, problematic communications between evaluators and exercise participants. However, the nature of the observations constituting this issue mandate its reporting. The adequate performance cited by PEMA on part of the Elizabethtown Area School District will be confirmed during the next scheduled demonstration of protecting actions for school children at Three Mile Island. Periodic plan review is still recommended for the district.

AREA REQUIRING CORRECTIVE ACTION

Problem ID	Location/Activity	NUREG Element	Proposed Correction Date	Confirmed Correction Date
TMIX89-20R	Lebanon County EOC	K.3.B,4	June 1990	

While briefing County monitoring/decontamination teams, the Radiological Officer neglected to advise the field workers to read their dosimeters every 30 minutes (as directed by the Lebanon County EOP, Appendix 13, page E-13-31). Furthermore, the Radiological Officer was not aware of County policy whereby emergency workers are required to request authorization to exceed exposures of 5 REM (page E-13-32 of the County EOP.), but advised, incorrectly, that workers would be rotated at 25 REM. It is recommended that the Radiological Officer review the County plan and better his familiarity with emergency worker control procedures. The distribution of updated instruction sheets for emergency workers addressing exposure limits, the use of dosimetry and KI, accompanying this briefing and/or distribution of equipment would enhance efforts at worker radiological exposure control. (Objective #6)

State Response:

The radiological officer has reviewed the county Annex and became more familiar with its contents. A joint training session with the radiological officer and the monitoring and decontamination team members conducted by the Conty EMC to review Annex E and the radiological protection, monitoring and decontamination procedures is scheduled for June 20.

AREA REQUIRING CORRECTIVE ACTION

Problem ID	Location/Activity	NUREG Element	Proposed Correction Date	Confirmed Correction Date
TMIX89-21R	Lebanon County EOC	K.3.B,4		

The radiological survey meters utilized at the Decontamination Station were last calibrated in August 1986. Although PEMA plans require the calibration on the frequency recommended by the manufacturer (which is every four years), an annual calibration (as cited in FEMA REP-2, page 6-4) is recommended for survey meters. (Objective #7)

State Response:

Pending.

AREA REQUIRING CORRECTIVE ACTION

Problem ID	Location/Activity	NUREG Element	Proposed Correction Date	Confirmed Correction Date
TMIX89-22R	Lebanon County Mass Care Center	K.5.b	June 1990	

There was some confusion on the part of the monitoring/decontamination teams over the trigger level requiring decontamination. It was thought that the trigger level was 0.5 mR/hr above background when it is actually 0.1mr/hr above background. (See Lebanon County EOP, Appendix 13, page E-13-3). Decon personnel should review the County plan and to become more familiar with decontamination procedures. (Objective #21)

State Response:

See response to TMIX89-25R.

AREAS REQUIRING CORRECTIVE ACTION

Problem ID	Location/Activity	NUREG Element	Proposed Correction Date	Confirmed Correction Date
TMIX89-23R	York County EOC	F.1.b,d F.2	10/20/89	

RACES operators never arrived at four municipal EOCs (Lewisberry Borough, Newberry Township, Springettsbury Township, and York Haven Borough), despite requests by those municipalities to the County EOC. County officials, in coordination with the York County RACES organization, should review the assignment procedure to ensure that a RACES operator is provided to all locations, as required by the plans to provide backup communications. (Objective 4)

State Response:

In a real event the situation would have been covered. The TMI exercise requires 34 (68) RACES operators and, for an exercise, it is not always possible to have enough personnel able to arrange their schedules to be available. There are, however, over 120 RACES operator on the county roster who would be assigned as required to an incident. The county has conducted a surprise drill and over seventy operators were prepared to respond with emergency power supplies.

AREAS REQUIRING CORRECTIVE ACTION

Problem ID	Location/Activity	NUREG Element	Proposed Correction Date	Confirmed Correction Date
TMIX89-24R	York County Medical Services- Ambulance	K.3.a, L.4.	Continuous	

The ambulance crew members were not prepared to adequately demonstrate the procedures for transporting a contaminated, injured patient. Although they participated enthusiastically, they had not been provided with sufficient training or equipment to accomplish this mission. The ambulance crew should receive further training and practice in monitoring and handling contaminated patients; the ambulance company should be provided with all necessary equipment, including survey meters and contamination control supplies. (Objective 23)

State Response:

Additional training has been provided to the ambulance crew members and will again be provided under the contractual training arrangements being made by PEMA. Regarding the equipment, the ambulance crew will be supported both by its supporting fire company, and should that equipment be in use elsewhere, as was the case in this exercise, the county HAZMAT team will provide the necessary equipment.

AREAS REQUIRING CORRECTIVE ACTION

Problem ID	Location/Activity	NUREG Element	Proposed Correction Date	Confirmed Correction Date
TMIX89-25R	Fairview Township EOC	K.3.a.	June 1990	

Although both the York County and Township plans indicate that 57 sets of self reading dosimeters have been pre-distributed to the municipality, the Township requested four additional sets from the County EOC. The municipality's actual needs should be reevaluated, and a sufficient quantity of dosimeters should be pre-distributed to the Township EOC; both plans should be revised to indicate the additional need, if necessary. (Objective 6)

State Response:

The municipality is reevaluating its actual dosimetry needs. The county and municipality will then request additional dosimetry and revise plans, if necessary.

AREAS REQUIRING CORRECTIVE ACTION

Problem ID	Location/Activity	NUREG Element	Proposed Correction Date	Confirmed Correction Date
TMIX89-26R	Springettsbury Township EOC	K.3.a.	June 1990	

Although both the York County and Township plans indicate that 65 sets of self reading dosimeters have been pre-distributed to the municipality, the Township requested additional sets from the County EOC. The municipality's actual needs should be reevaluated, and a sufficient quantity of dosimeters should be predistributed to the Township EOC; both plans should be revised to indicate this additional need, if necessary. (Objective 6)

State Response:

The municipality is reevaluating its actual dosimetry needs. The county and municipality will then request additional dosimetry and revise plans, if necessary.

AREA REQUIRING CORRECTIVE ACTION

Problem ID	Location/Activity	NUREG Element	Proposed Correction Date	Confirmed Correction Date
TMIX89-27R	Franklin County Mass Care Center	K.3.b	Continuous	

The emergency worker exposure control procedures utilized during the exercise were not in accordance with plan directives. The monitoring/decon team members were not aware of the County procedures requiring the reading of personal dosimetry every half-hour, or the necessity to request authorization from the County EMA to exceed 5 REMS (page E-71 of the Franklin County EOP). Instead, the County Radiation Officer stated that he would maintain logs for team members by contacting them approximately every hour to record their readings. These plan designated procedures should be followed with regard to emergency worker exposure control, including the distribution of personal dosimetry-KI forms to monitoring/decon team members (page 2-73 of the County EOP).
(Objective #6)

State Response:

The staff member did not properly use the revised county Annex E. He has been counseled and has received additional training. This training will of course be continuous.

AREA REQUIRING CORRECTIVE ACTION

Problem ID	Location/Activity	NUMERICAL Element	Proposed Correction Date	Confirmed Correction Date
TMIX89-28R	Northumberland County Mass Care Center	H.10	June 1990	

The CDV 700 survey meters utilized at the Mass Care Center contained no markings (outside or inside the casing) identifying the last date of calibration. The calibration date should be identified for these meters, and affixed in some manner on the instruments themselves (or available on accompanying documents). (Objective #21)

State Response:

The PEMA calibration personnel marking the inside of the battery case each time an instrument is calibrated. Northumberland County has been requested to check its equipment and return any marked CDV 700 or CDV 750 instruments for calibration and marking.

AREA REQUIRING CORRECTIVE ACTION

Problem ID	Location/Activity	NUREG Element	Proposed Correction Date	Confirmed Correction Date
TMIX89-29R	Snyder County Reception Center	J.12, K.5.a 0.5	Continuous	

The emergency worker in charge of the monitoring/decontamination team at the Reception Center was not aware of the plan designated contamination trigger level (0.1 mR/hr above background as stated on page E-53 of the Snyder County EOP), and admitted that he was in need of refresher training. All personnel designated to assist in the monitoring and decontamination of evacuees should be provided periodic training in radiological matters. (Objective #21)

State Response:

The emergency worker at the monitoring and decontamination center had reviewed the new support county Annex E but in the pressure of the exercise failed to refer to the Annex E. Additional training has been and will be conducted with the monitoring and decontamination teams.

AREA REQUIRING CORRECTIVE ACTION

Problem ID	Location/Activity	NUREG Element	Proposed Correction Date	Confirmed Correction Date
TMIX89-30R	Juniata County EOC	J.11	Continuous	

Although the participating officials were very knowledgeable regarding the food pathways in the County, no one in the EOC was familiar to any extent with the preventative and emergency Protective Action Guidelines and corresponding actions for milk, fruits, and drinking water (as outlined in both the Commonwealth Plan and recently adopted annex to the County EOP). Continued training in radiological matters is recommended for the appropriate County officials, especially in the area of Ingestion Pathway protective measures. (Objective #30)

State Response:

As this was the first ingestion pathway exercise conducted in Pennsylvania, there was a great deal of information presented to many persons which was new and different. Training was conducted for each ingestion county, including both the EMA staff and agricultural agencies. The training raised the level of awareness to unprecedented levels but there is still more training and more exercising needed.

AREA RECOMMENDED FOR IMPROVEMENT

Problem ID	Location/Activity	NUREG Element
TMIX89-1I	State EOC/ Agricultural Sampling Teams	I.8

One problem concerning the transport and control of the samples obtained by the fifteen ASCS teams during the exercise had to do with the directive issued from the State EOC instructing the teams to deliver the samples to their respective County EOC (see the 1355 Teletype message on 10/19/85). The County EOCs are not equipped or prepared to accept contaminated samples, and can do little with them other than forward them to the lab. During the exercise, EOC staffs of the counties located closest to the restricted areas (including Dauphin, Lancaster and York) expressed concerns over the possible and unnecessary contamination of their facility when informed of the pending arrival of the samples. Field samples should either be delivered directly to a lab, or to specially designated collection points supported by appropriate personnel and equipment to assure monitoring and containment of any contamination.

(Objective #27)

AREA RECOMMENDED FOR IMPROVEMENT

Problem ID	Location/Activity	NUREG Element
TMIX89-2I	State EOC	M.1

Some confusion was observed on part of PEMA staff members during the exercise with regard to the application of the Pennsylvania relocation PAG to the areas impacted by plume deposition. During a briefing on 10/20/89 the BRP advised PEMA that the Elizabethtown restricted zone was in excess of the .5 REM per year PAG, and that the Hershey and Roundtop depositions did not exceed this PAG and could be resettled immediately. However, the PEMA staff members misinterpreted these BRP findings, and in response dedicated a substantial amount of time and effort (including the advisement of the counties) generating resources for the long term relocation of 50,000 residents from all three deposition areas. Relocation was only necessary for the 18,000 residents displaced from the Elizabethtown restricted area. Although this confusion was corrected at the final briefing of the exercise by BRP personnel, the incident still suggests a need for closer coordination between Operations and Technical Support during Recovery, Reentry and Relocation decision making. It is recommended that EIS printouts be provided to the BRP staff periodically for their review and consultation during all phases of the exercise.

(Objective #33)

AREA RECOMMENDED FOR IMPROVEMENT

Problem ID	Location/Activity	NUREG Element
TMIX89-3I	State EOC, BRP	M.1

BRP did not use a computer modeling program to support analysis of elevated release. It is recommended that the BRP acquire and utilize one of the available computer modeling programs (such as the Interactive Rapid Dose Assessment Model (IRDAM) package). (Objective 10)

AREA RECOMMENDED FOR IMPROVEMENT

Problem ID	Location/Activity	NUREG Element
TMIX89-4I	State EOC/ Risk County EOCs	M.1

The experience of developing a resettlement plan during the exercise for the return of the evacuated population to the uncontaminated areas in the 10-mile EPZ, revealed a need to modify existing emergency plans at both the State and county levels. A great extent of effort on part of the State EOC staff was dedicated to the resettlement of the uncontaminated West Shore area. A disproportionate amount of discussion focussed on such details as the priorities for the re-establishment of vital services (police, fire, first aid), critical industries (electric, sewage, service stations, food stores, etc.) and institutions (hospitals, nursing homes, schools, and banks). Such details as the re-establishment of vital services, industries and institutions for habitable areas are not situational or contingent upon the location and extent of deposition, and should be pre-established as set plan procedures. It is recommended that these procedures be identified in advance to allow more time for critical decision-making, such as the decontamination of areas impacted by deposition and the support of residents who are to be displaced for a long term. (Objective #33)

AREA RECOMMENDED FOR IMPROVEMENT

Problem ID	Location/Activity	NUREG Element
TMIX89-5I	EOF	H.3

Displays in the EOF were limited. Maps showing evacuation routes and relocation centers were not posted; protective action recommendations were not recorded on status boards. Although the absence of these displays did not hamper emergency response during the exercise, their provision is recommended for the enhancement of decision-making by the EOF staff. (Objective #5)

AREA RECOMMENDED FOR IMPROVEMENT

Problem ID	Location/Activity	NUREG Element
TMIX89-6I	BRP Field Monitoring Team (RAD 10)	F.1.d

Communication interruptions were caused by the periodic inability of the RAD 10 Team to transmit to the Fulton Building by use of its mobile radio unit. (The team experienced no problems receiving transmissions from the Fulton Building.) Transmission failures resulted in communication delays averaging 15 to 18 minutes. The transmission problems were eventually corrected when the team switched to the Allendale repeater. (Direct transmissions and use of the Big Flat repeater were ineffective.) Although these communication interruptions did not have significant impact on emergency response during the exercise, the cause of the transmission problems should be further investigated. Fiscal realities permitting, the use of portable cellular phones would provide a more convenient backup communication means than the current dependance on pay phones. (Objective #4)

AREA RECOMMENDED FOR IMPROVEMENT

Problem ID	Location/Activity	NUREG Element
TX89-7I	BRP Field Monitoring Teams	I.8

Although not required, the provision of preprinted labels to be affixed to the bagged air sampling media in the field will help to assure that the correct and required information is included with samples for their submission to the lab.
(Objective #8)

AREA RECOMMENDED FOR IMPROVEMENT

Problem ID	Location/Activity	NUREG Element
TMIX89-8I	DER Lab	H.10

The GM survey meter used by the Lab for contamination control purposes was last calibrated 7/17/86. Although Annex E to the Commonwealth EOP (Appendix 6, page E-16-14) states that these meters are to be calibrated in intervals recommended by the manufacturer, FEMA REP-2, REV. 1, "Guidance on Offsite Emergency Radiation Measurement Systems, Phase 1 -- Airborne Release," (page 6-2) advises that instrument calibration be done annually. (Objective #7)

AREA RECOMMENDED FOR IMPROVEMENT

Problem ID	Location/Activity	NUREG Element
TMIX89-9I	Joint (Utility) Media Center	H.3

No maps or status boards were utilized in the Joint (Utility) Media Center during the exercise. Such displays greatly enhance the briefing of the media as well as the understanding of incident status by the Media Center staff, and should be utilized in future exercises. (Objective #5)

AREA RECOMMENDED FOR IMPROVEMENT

Problem ID	Location/Activity	NUREG Element
TMIX89-10I	Cumberland County Emergency Worker Decon	H.10

The CD 700 survey instruments used for monitoring workers and vehicles were calibrated only as recently as August of 1986. Although Annex E to the Commonwealth EOP (Appendix 6, page E-6-14) directs that these meters will be calibrated at the frequency suggested by the manufacturer, FEMA REP-2, REV. 1, "Guidance on Offsite Emergency Radiation Measurement Systems, Phase 1 -- Airborne Release," (page 6-2) advises that instrument calibration be done annually. (Objective #25)

AREA RECOMMENDED FOR IMPROVEMENT

Problem ID	Location/Activity	NUREG Element
TMIX89-11I	Dauphin County EOC	A.1.d

Some room for improvement was observed with regard to the use of the dedicated line linking the County with the State EOC and the Utility. As many as five different personnel of varying authority in the EOC answered this line and received key messages during the exercise. Not all messages were immediately recorded on message forms, while some messages were recorded with minor inaccuracies. It is recommended that the protocol for use of the dedicated line in the EOC be reviewed and modified to improve message accuracy. Should the County continue to allow numerous personnel to answer the dedicated line, it is recommended that control of key messages be enhanced by utilizing an additional message log to be placed at the dedicated line phone. (Objective #3)

AREA RECOMMENDED FOR IMPROVEMENT

Problem ID	Location/Activity	NUREG Element
TMIX89-12I	Dauphin County Mass Care Center	K.3.b

The mass care decon team members were unsure of how to properly dispose of run off contaminated waste water, as no public drainage system is available in the area that would provide the "considerable dilution" mentioned in the Dauphin County plan (Annex E to the County EOP, Appendix 13, page E-13-20) and Annex E to the Commonwealth EOP (Appendix 5, page E-5-23). The County should provide further guidance in this matter. Given the fact that FEPA Policy ("Policy Statement on Disposal of Waste Water and Contaminated Products From Decontamination Activities," December 1988) advises that such waste water is unlikely to present a significant public hazard, and that BRC procedures (Annex E to the Dauphin County EOP, Appendix 16, page E-16-4) provide for the monitoring and decontamination of reception and mass care centers during recovery measures, it is recommended that the decon team be instructed to allow the waste water to run off, assuring that no drinking water sources will be impacted and the run off area is secured until recovery measures are conducted. (Objective #21)

AREA RECOMMENDED FOR IMPROVEMENT

Problem ID	Location/Activity	NUREG Element
TMIX89-13I	Harrisburg School District	J.10.g, F.1.d

It is recommended that the school buses be equipped with radios, or that an escorted caravan procedure be adopted by the School District to assure the availability of communications with buses in the event one should break down enroute to the Host school during an evacuation.
(Objective #19)

AREA RECOMMENDED FOR IMPROVEMENT

Problem ID	Location/Activity	NUREG Element
TMIX89-14I	Steelton Highspire School District	F.1.b

Communications with the County EOC were problematic. The one-way radio located in the Superintendent's office for key incident messages failed, and mandated notification of ECLs by commercial phone. Although the use of this backup communications means did not negatively impact the School District's response, it is recommended that the failure of the radio system be investigated and corrected. (Objective #4)

AREA RECOMMENDED FOR IMPROVEMENT

Problem ID	Location/Activity	NUREG Element
TMIX89-15I	Hummelstown Borough EOC	A.1.b

No formal briefings were conducted during the course of the exercise. It is recommended that the EMC conduct periodic briefings to assure that the EOC staff members are aware of the current ECL, plant conditions, status of unmet needs, and individual responsibilities.
(Objective #3)

AREA RECOMMENDED FOR IMPROVEMENT

Problem ID	Location/Activity	NUREG Element
TMIX89-16I	Hummelstown Borough EOC	H.3

Due to the small size of the EOC facility, radio traffic from the RACES unit competed with intra-EOC discussions. It is recommended that the RACES operator be relocated to an adjacent office within the EOC building.
(Objective #5)

AREA RECOMMENDED FOR IMPROVEMENT

Problem ID	Location/Activity	NUREG Element
TMIX89-17I	Hummelstown Borough EOC	E.6

The briefing conducted by the Fire/Rescue Director for the Route Alert personnel did not adequately address the notification of hearing impaired residents or the actual message to be announced over the vehicle loud speakers. (These matters were cleared up by the inter-division of the Borough EMC.) Further training is recommended for the Fire/Rescue Director with regard to municipal responsibilities for alert and notification of Borough residents. (Objective #12)

AREA RECOMMENDED FOR IMPROVEMENT

Problem ID	Location/Activity	NUREG Element
TMIX89-18I	Londonderry Township EOC	H.3

Fiscal realities permitting, it is recommended that the Township acquire a dedicated backup generator for the EOC, rather than depend on the fire truck generator which becomes unavailable during route alerting and emergency calls. (Objective #5)

AREA RECOMMENDED FOR IMPROVEMENT

Problem ID	Location/Activity	NUREG Element
TMIX89-19I	Lower Paxton Township EOC	K.5.b

The Radiological Control Officer did not advise emergency workers to report to the Emergency Worker Decontamination Station at the conclusion of their mission (as prescribed by the Township Plan, page I-15) during the course of the exercise. It is recommended that this advisement be included in the briefings accompanying distribution of dosimetry and KI.
(Objective #6)

AREA RECOMMENDED FOR IMPROVEMENT

Problem ID	Location/Activity	NUREG Element
TMIX89-20I	Lancaster County EOC	A.2.a

Internal hard copy message traffic could have been better managed with regard to the provision of State EOC news release copies to the County PIO. The distribution of two copies was unnecessarily delayed: a State news release FAX announcing the Alert declaration arrived in the County EOC at 1735 hours but did not reach the County PIO until 1840 hours, while the State news release FAX announcing the Governor's declaration of a State Emergency was received at 1930 hours but not forwarded to the PIO until 2034 hours. Fortunately these distribution delays did not negatively impact the County public information function as contents of both releases were discussed in EOC-wide briefings conducted by the EMC shortly after their arrival. Nonetheless, the EMC should ensure distribution of all pertinent State messages to the appropriate County personnel in a timely manner.
(Objective #3)

AREA RECOMMENDED FOR IMPROVEMENT

Problem ID	Location/Activity	NUREG Element
TMXI89-21I	York County EOC	h.3

The Emergency Operations Center consists of a number of small rooms, offices and hallways; the operations room is crowded and noisy, and cannot accommodate the entire staff. Fiscal realities permitting, it is recommended that the EOC be enlarged and reconfigured to reduce the number of small rooms and provide a larger operations area. (Objective #5)

AREA RECOMMENDED FOR IMPROVEMENT

Problem ID	Location/Activity	NUREG Element
TMXI89-22I	York County EOC	M.1

York County established an ad hoc plan for the staged resettlement of the evacuated area of the County. It is recommended that the plan be amended to include such specific procedures for resettling, recovery, reentry and relocation of the County. (Objective #3)

AREA RECOMMENDED FOR IMPROVEMENT

Problem ID	Location/Activity	NUREG Element
TMIX89-23I	York County Medical Services Hospital and Ambulance Service	L.1

The hospital did not have written plans and procedures for the treatment of contaminated, injured patients. Written plans and procedures should be developed, and provided for use by the hospital staff. (Objective 24)

AREA RECOMMENDED FOR IMPROVEMENT

Problem ID	Location/Activity	NUREG Element
TMIX89-24I	Fairview Township EOC	H.3

Although ECLs were displayed on the status board, no other information was recorded. It is recommended that the status board be used to display not only ECLs, but also other response actions and significant developments. (Objective #5)

AREA RECOMMENDED FOR IMPROVEMENT

Problem ID	Location/Activity	NUREG Element
TMIX89-25I	Newberry Township EOC	H.3

The EOC did not have a source of running water or backup power. It is recommended that these resources be provided. (Objective #5)

C. STATUS OF PRIOR ISSUES

The following previous inadequacies were identified at either the November 20, 1985 Three Mile Island Exercise or the October 22, 1987 Three Mile Island Exercise. Each item is followed by a discussion of findings, as demonstrated during the October 17, 1989 exercise.

STATE EOC

TMIX87-1R:

Radio and telephone messages to the counties were often vague relative to providing them with clear, understandable information about the various emergency situations and recommended response actions. Basic communication skills and procedures need to be practiced so that concise information flows between the organizations.

FINDINGS: UNRESOLVED

The phrasing of the evacuation protective action message forwarded to the risk counties from the State EOC via the dedicated line caused temporary confusion at the Dauphin County EOC (i.e., whether evacuation was "ordered" by the Governor, or only "authorized"). Similarly, the content of the State EOC message regarding the ingestion of KI by emergency workers caused confusion in the Cumerland County EOC, and resulted in the need for clarification. All key messages forwarded over the dedicated line regarding incident status and protective actions need to be conveyed in concise, standardized terminology.

(See Objective #3 under the State EOC.)

Accident Assessment (BRP)

TMIX87-2R:

Communication with the State EOC was verbal and not as efficient as it could be. For example, an "unmonitored release" (at BRP) became an "uncontrolled release" (at PEMA) and then finally an "uncovered release" on the message status monitors. This could be improved with written messages, which are now possible with BRP located at the EOC. It also was noted that "Site Area Emergency" was misunderstood by a BRP player and was not passed on to PEMA for several minutes.

FINDINGS: CORRECTED.

BRP messages were accurate and effectively conveyed.
Accident Assessment (BRP)

TMIX87-3R:

Dose assessment by BRP was accomplished by computer and hand calculation as well. The same programs and hand calculations had been checked and used many times in the past and agreed with each other. However there was a substantial difference with calculations done by the licensee and that contained in the scenario. This discrepancy could not be resolved during the exercise and should be investigated as an after-exercise action. Finally, the movement of data and information from the EOF could be improved. For example, the cause of loss of offsite power was never transmitted. This knowledge would have been useful in determining whether the power could be expected to be restored in a reasonable time. There were no major problems in the BRP performance, but the difference in the dose assessment results could point to a significant problem. It is not known where the problem is, since the BRP calculations had been previously checked (as had the licensee's).

FINDINGS: CORRECTED.

BRP dose assessment agreed well with the Utility's at 4 miles. BRP calculated 55 mr/hr where the Utility computed 34 mr/hr. Since BRP procedures assume a ground level release and the Utility's allow for an elevated release, these numbers are consistent.

State (PEMA) Media Center

TMIX87-4R:

Coordination was poor at times between the PEMA Media Center (EOC) and the PEMA Liaison at the Joint Media Center (Utility Media Center). Such a case was when the liaison was notified thirty minutes after the evacuation had been ordered. The media had received the information from the PEMA Media Center, but the Liaison did not have it for use in a media briefing that was going on at that time.

FINDINGS: UNRESOLVED.

Coordination between the two media centers was again problematic during the exercise, as evidenced by the almost simultaneous issuance of two conflicting press releases regarding the declaration of an Alert and the question of whether there had been an offsite release. (See Objective # 14 under the State EOC.)

CUMBERLAND COUNTY

Cumberland County EOC

TMIX87-5R:

Lower Allen Township officials were never aware of the "Alert" status during the exercise. Evaluators cannot determine whether the Cumberland County staff failed to make the notification, or whether the message was received at the Township EOC, but it went astray before reaching the EMC. County officials should investigate with Township officials to determine the cause, and take appropriate actions to correct the problem.

FINDINGS: CORRECTED

The Lower Allen Township EMC was promptly notified of the Alert Declaration during the exercise.

Cumberland County EOC

TMIX87-6R:

Dosimetry and KI were not distributed to Lower Allen Township emergency workers as early as it should have been, and route alerting was delayed as a result.

FINDINGS: CORRECTED

Dosimetry distribution was adequately demonstrated by the Sheriffs Department.

Cumberland County Emergency Worker Decon

TMIX87-7R:

Emergency workers performing monitoring functions were not familiar with the radiation level limit for decontamination. Additional training in this area should be provided to all appropriate personnel.

FINDINGS: CORRECTED

The Decon team members were aware of the trigger level for decontamination, as well as adequately knowledgeable of other applicable procedures with regard to emergency worker monitoring and decontamination.

New Cumberland Borough EOC

TMIX85-8R:

The Borough initiated evacuation activity immediately upon notification by the County, one-half hour prior to the time designated by the Governor. The Borough should determine the cause of this lack of coordination and institute whatever modifications in procedure or training are indicated.

FINDING: CORRECTED

The Borough properly coordinated all protective actions with the County EOC.

New Cumberland Borough EOC

TMIX85-9R:

The simulation of delivery of dosimetry presented no demonstration of its correct use. Future exercises should include actual delivery of at least representative samples of equipment available.

FINDING: CORRECTED

A representative sample was delivered (although not required according to pre-exercise agreements). The correct use of dosimetry was adequately demonstrated.

Lower Allen Township EOC

TMIX85-10R:

The route alert teams were activated prematurely. Initiation of route alerting should be in conjunction with the sounding of sirens and activation of EBS.

FINDING: CORRECTED

The one participating route alert team was properly dispatched after siren activation.

Lower Allen Township EOC

TMIX85-14R:

Future exercises should demonstrate the actual distribution of at least representative samples of dosimetry equipment, record forms, and KI to all municipal EOCs to provide local emergency workers additional experience in the use of this equipment. The County may also wish to reconsider its current procedure of distribution of this equipment to municipalities at the time of an emergency. Pre-positioning dosimetry equipment at the municipal level will allow instant access in the event of a fast-breaking incident, removing the need for municipalities to retrieve instrumentation from the county.

FINDING: CORRECTED

Dosimetry and record forms were actually distributed to the Township during the exercise.

DAUPHIN COUNTY

Dauphin County EOC

TMIX87-1D:

Lower Paxton Township did not participate in the exercise. When Dauphin County was informed of this, neither Dauphin County Officials nor the State Liaison Officer took any action to protect the health and safety of the residents of this Township. State and County emergency management officials must develop procedures to ensure the protection of the population in the event this problem occurs.

FINDING: CORRECTED

This prior deficiency was corrected through a remedial exercise (TMIX89R). The Lower Paxton Township EOC was promptly mobilized and fully staffed with plan designated personnel during the full scale October 1989 Three Mile Island Exercise.

Dauphin County EOC

TMIX87-2D:

The exercise objective to demonstrate the distribution of dosimetry kits was not adequately demonstrated. The inadequacy here was two-fold, (1) in the actual distribution of the dosimetry, and (2) in the provision of adequate training in the use of dosimetry for emergency workers.

The inadequacy of the distribution of dosimetry kits to emergency workers was most significant in Dauphin County. Failure in this area on part of the County EOC negatively impacted the response of several municipalities in the exercise, resulting in (1) delay in the implementation of protective actions by the Conewago Township EOC, (2) a delay and confusion in the distribution of dosimetry to emergency workers by the Derry Township EOC, (3) a complete failure of distribution of dosimetry kits to emergency workers by the Harrisburg City EOC, and (4) the dispatching of emergency workers without dosimetry kits by the Paxtang Borough EOC. Distribution problems were observed in other counties to a lesser extent, and are addressed in the "Areas Requiring Corrective Action."

Emergency workers were not provided adequate instructions on the use of dosimetry. Initial and refresher training should be appropriately accomplished in accordance with the criteria set forth in NUREG 0654.

Findings: CORRECTED

Inspection of all dosimetry supplies by federal evaluators during this exercise confirmed the pre-distribution of dosimetry and KI to the Dauphin County municipalities, with the exception of South Hanover Township. The municipal Radiological Officer immediately requested dosimetry supplies from the County upon his arrival in the South Hanover Township EOC. Adequate supplies were promptly provided (thus guaranteeing their future pre-distribution.) In most cases, emergency workers were knowledgeable of radiological exposure control procedures.

Dauphin County Emergency Worker Decon

TMIX87-8R:

Activation of the decontamination/monitoring station and assembly of team members was not timely in accordance with the plan and the established demonstration window (2030-2200). The decon station was not fully set up until after 2200 before it could be properly evacuated. The succession of command and responsibility within the decon team was not clearly defined. Four team members arrived at the decon station, prior to the team chief arriving at 2140 and took no action to initiate the setting up of the station. As a result, unnecessary delays were experienced in providing decon/monitoring services to emergency workers. Team members need to be cross-trained in each others duties and responsibilities.

FINDINGS: CORRECTED

The emergency worker decontamination station was promptly activated by the timely mobilization of 8 staff members.

Dauphin County Emergency Worker Decon

TMIX87-9R:

The decon team did not have all the necessary equipment and resources as outlined in the plan. Clean clothes were not available. In addition, the following items were missing: barrier tape, plastic sandwich bags, scissors, hand cleaner, surgical masks and head covers, traffic cones and a sufficient number of batteries.

FINDINGS: CORRECTED

The emergency worker decontamination station was properly equipped for this exercise.

Dauphin County Emergency Worker Decon

TMIX87-10R:

Approximately 2205 hours, after the decon team finally set up the decontamination/monitoring station, they were directed to relocate to the mass care center approximately an hour distance away. This meant that there would be no decon station readily available for emergency workers immediately outside the plume exposure pathway EPZ. This is unpractical under a real situation. Decon teams need to be available to set up a decon station for emergency workers and also be available at the mass care centers to take care of the public.

FINDINGS: CORRECTED

The decon team was not directed to abandon their station to assist at the mass care center during this exercise. Adequate decon/monitoring personnel were located at the mass care center.

Dauphin County Mass Care Center

TMIX87-11R:

Monitoring and decontamination of vehicles and equipment was not demonstrated or discussed. Procedures should be developed and resources made available to perform this function at the mass care center.

FINDINGS: CORRECTED

Procedures were properly demonstrated during this exercise.

Central Dauphin School District

TMIX85-42R:

The existing plan does not appear to provide sufficient lead time to dispatch buses for special education and special activity students, to dispatch buses for evacuation, and to obtain planning information on school attendance and current traffic conditions. The current plan should be amended to provide sufficient response time for busing activities and collection of information for emergency planning decisions. Also, school staff should clarify the procedures and timing for releasing buses to the host school.

FINDINGS: CORRECTED

Under the current plan and present procedures, notification of the Transportation Coordinator, bus companies and drivers occurs at the Alert stage. The current plan also clearly specifies that only the District Superintendent (or his/her designated representative) upon notification from the Dauphin County EOC, authorizes the schools to evacuate students to Host schools.

Harrisburg School District

TMIX85-43R:

The decision was made to evacuate the Foose Early Childhood Center at 0925 during Site Area Emergency. This decision was not consistent with the School District RERP. The District should discuss this discrepancy in emergency response with the County.

FINDINGS: CORRECTED

During the exercise protective action recommendations forwarded by Dauphin County were properly followed by the School District, as prescribed by the District plan.

Middletown Area School District

TMIX85-44R:

Additional training should be provided to school representatives regarding sneltering techniques as a means of protective action.

FINDINGS: CORRECTED

The participating school principal was knowledgeable of these techniques, outlined in the District plan in Appendix B, page 8.

Middletown Area School District

TMIX85-45R:

Maps should be developed for distribution to bus drivers who are activated for the purpose of school evacuation and who may be unfamiliar with evacuation routes and destinations.

FINDINGS: CORRECTED

Maps were available at the participating school.

Steelton-Highspire School District

TMIX85-46R:

The School District should coordinate with the County in order to determine the deficiency in the communications network which resulted in non-notification to the district of the Site Area Emergency at TMI. This may be due to the fact that the one-way communications link with the County was not continually monitored. Any necessary corrections to the system should be made in order to avoid this breakdown in communications during future exercises.

FINDINGS: UNRESOLVED

The one-way radio system failed again during this exercise. The failure, however, did not negatively impact emergency response by the School District, as notifications were adequately forwarded from the County by commercial phone.

Steelton-Highspire School District

TMIX85-47R:

Provisions should be made to ensure EBS monitoring capability at the School District office.

FINDINGS:

An AM/FM radio is available in the Superintendent's office for monitoring EBS messages during an incident.

0203593 - Township EOC

TMIX85-27R:

The individual assigned as the Emergency Management Coordinator for the Township is currently an employee at TMI, and, by plan, would not be available to support the Township emergency response at the time of an emergency at that facility. In future exercises, the Township needs to have an individual leading the Township's radiological emergency response who would actually be available in the event of an accident at TMI. This person must be designated in the plan as being in a coordinating position and have a backup.

FINDINGS: WITHDRAWN

The EMC designated by the Township EOP remains a member of the Utility Emergency Response Team. This person was not available for the EOC during the exercise. However, alternate, plan-designated personnel have consistently demonstrated the ability to substitute EMC during REP exercises without negatively impacting the Township's response.

Conewago Township IOC

TMIX87-12R:

A more direct line of communication must be established between Conewago Township and Dauphin County. During the exercise the EMC verified County radio messages with Derry Township instead of with County staff members. They should follow their plan and communicate with the county rather than other jurisdictions.

FINDINGS: CORRECTED

Three operable communication systems were available in the EOC that could provide direct communications with Dauphin County. Messages were not verified with Derry Township during this exercise.

Harrisburg City EOC

.NIX87-13R:

The initial notification by the County EOC never did come in. The police dispatcher heard "chatter" on the radio that caused her to notify the Shift Commander, who telephoned the County EOC for information on the emergency. It was stated by the County that the computer either got a busy signal or just passed them up. The same thing happened during the last exercise. Some communication from the County EOC arrived late (Site Area Emergency 30 minutes).

FINDINGS: CORRECTED

As a result of this previous inadequacy from the 1987 exercise, the County modified its notification call down system by including procedures for a manual call back for verification. Notification was successful and timely for all Dauphin County municipalities during the exercise.

Harrisburg City EOC

TMIX87-14R:

On five different occasions the Mayor and his PIO developed news releases which included information about the incident, as well as recommendations to the public about what to do to protect themselves. When asked what he would do with these releases, he stated he would give the information to Rumor Control and directly to the news media either in person or over the telephone. There was no attempt to coordinate this through the County EOC as the plan calls for.

FINDINGS: CORRECTED

Public information activities at the City were coordinated with Dauphin County.

Highspire Borough EOC

TMIX85-37R:

All Borough personnel with emergency response duties should participate in future exercises.

FINDINGS: CORRECTED

All EOC staff positions were staffed during the exercise with plan designated personnel.

Highspire Borough EOC

TMIX85-38R:

Additional training should be provided to the Traffic Control Officer to ensure awareness of the need to man the 12 TCPs identified in the plan.

FINDINGS: CORRECTED

During the 1989 exercise the Police Services Officer was knowledgeable of the traffic control function for Highspire Borough. (The current plan only identifies 6 TCPs as municipal responsibility.)

Highspire Borough EOC

TMIX85-39R: The Borough should take the necessary steps to develop and maintain a written list of mobility and/or hearing impaired individuals residing within the plume EPZ.

FINDINGS: CORRECTED

A current list of mobility and hearing impaired individuals was available in the EOC during the exercise.

Hummelstown Borough EOC

TMIX85-26R:

The list of mobility impaired residents called for in the Borough's RERP was not prepared as of the time of the exercise. This list should be promptly assembled and maintained in the EOC.

FINDING: CORRECTED

A current list of mobility impaired residents was available in the EOC during the exercise.

Londonderry Township EOC

TMIX85-31R:

Dauphin County did not provide the supplemental assistance requested by the Township, i.e., State Police and National Guard assistance for traffic control and sector security. A RACES operator also was not available. The EMC should consult with county officials to ensure this necessary support during future exercises.

FINDING: CORRECTED

A RACES operator was available and deployed in the EOC in a timely manner during the exercise.

Lower Paxton Township EOC

TMIX85-18R:

No message was observed at the Township level indicating that the sirens had been activated. The EMC should take measures to ensure that route alerting is conducted in coordination with siren and EBS activation in future exercises.

FINDINGS: CORRECTED

Route alerting was conducted in coordination with siren activation during the exercise.

Lower Paxton Township EOC

TMIX89R-1R:

The current Lower Paxton Township EOC lists of hearing impaired individuals and special needs residents are incomplete and inaccurate. More complete lists should be generated as soon as possible.

FINDINGS: CORRECTED

Current and complete lists were available in the EOC during the exercise.

Lower Swatara Township EOC

80TMIX85-21R:

Several EOC positions were not staffed for the exercise. All positions as presented by the Township REP plan should be staffed in future exercises.

FINDING: CORRECTED

All EOC positions were staffed during the exercise.

Lower Swatara Township EOC

TMIX85-22R:

The County was able to meet only half of the bus and ambulance needs of the Township. The Township should confer with the County to ensure that all unmet needs are fulfilled during future exercises.

FINDING: CORRECTED

The EMC assured that all unmet needs were communicated to, and met by the County during the exercise.

Middletown Borough EOC

TMIX85-40R:

The Borough should develop and maintain clear round-the-clock EOC staffing procedures.

FINDINGS: UNRESOLVED

This inadequacy could not be resolved as Objective #34 -- demonstration of a shift change -- was not scheduled for Middletown Borough.

Middletown Borough EOC

TMIX85-41R:

The checklists within the procedures handbook utilized by EOC staff should be revised in order to correspond with the Middletown Borough RERP. Also, activities identified on action checklists should be organized in accordance with established emergency action levels to avoid confusion as to the sequence of required procedures.

FINDINGS: CORRECTED

An additional set of SOPs with action checklists structured by the ECLs for each EOC position has been included in the most recent Joint Borough EOP (July 1989).

Paxtang Borough EOC

TMIX87-15R:

A staffing problem noted was the failure to man the Medical Services, Transportation Services and Public Works and Resources positions. Although a number of these duties were performed by the existing staff, full EOC staffing as designated in the plan was not demonstrated.

FINDINGS: CORRECTED

All EOC positions designated in the plan were staffed.

Paxtang Borough EOC

TMIX87-16R:

The following lists were not available for use: (a) hearing impaired, (b) non-English speaking individuals, (c) non-ambulatory residents.

These lists are important to maintain so that the special needs of the affected populace can be met during an emergency.

FINDINGS: CORRECTED

Current and complete lists were available in the EOC during the exercise.

Royalton Borough EOC

TMIX85-28R:

Many of the participating EOC staff had received no formal training in emergency management. EOC staff should be provided training on emergency management procedures to improve their response skills.

FINDING: WITHDRAWN

Royalton Borough no longer staffs an independent EOC pursuant to the 1987 Borough Resolution, whereby key response responsibilities have been assumed by Middletown Borough in the joint EOC.

Royalton Borough EOC

TMIX85-29R:

Sufficient EOC staff are currently not available for a full first and second shift and around-the-clock staffing could be accomplished only in a most awkward manner. Sufficient staff should be assigned to EOC functions to support round-the-clock staffing. Also, EOC staff should participate throughout the entire term of future exercises.

FINDING: WITHDRAWN

Staffing ability will be evaluated henceforth at the Joint Borough EOC. (See TMIX85-29R.)

Royalton Borough EOC

TMIX85-30R:

Implementation of route alerting occurred in a premature manner. Route alerting should take place in conjunction with the sounding of sirens and activation of EBS.

FINDING: CORRECTED

Route alerting was properly coordinated with the sounding of sirens in the Joint Borough EOC during the 1989 exercise.

South Hanover Township EOC

TMIX85-23R:

Activation of a complete first shift was severely incomplete. The Township should ensure complete staff representation at future exercises.

FINDING: CORRECTED

The South Hanover Township EOC was fully staffed in a timely manner during the exercise.

South Hanover Township EOC

TMIX85-24R:

Information on mobility impaired and hearing impaired persons was not available in written form. A listing should be developed of all individuals with special transportation needs; this list should be maintained at the EOC.

FINDING: CORRECTED

Current and complete lists of mobility and hearing impaired residents were available and utilized in the EOC during the exercise.

South Hanover Township EOC

TMIX85-25R:

Emergency management staff at the South Hanover Township EOC should ensure that route alerting is accomplished in coordination with siren and EBS activation, whether simulated or actual.

FINDING: CORRECTED

Route alerting was successfully demonstrated during the exercise in coordination with siren and EBS activation.

Steelton Borough EOC

TMIX85-20R:

The Borough Radiological Officer has reportedly never seen the dosimetry kit that would be provided by the county. Hands-on training is obviously needed. Future exercises should include the provision of at least one sample of the dosimetry equipment available.

FINDING: CORRECTED

All necessary dosimetry was in place. The Radiological Officer was familiar with the kit and had recently been trained.

Steelton Borough EOC

TMIX87-17R:

Although the Radiological Officer is very knowledgeable, radiological exposure control training (at least a short cursory course) for key staff members and other interested emergency workers would be very helpful. No formal (or informal) training has been received by any Steelton personnel. This training needs to be accomplished and documented. It is recommended that, as a minimum, this documentation be administered at a central point.

FINDINGS: CORRECTED

Radiological training has been conducted for the Radiological Officer, as well as many other members of the EOC staff.

Swatara Township EOC

TMIX85-32R:

Swatara Township should develop clear procedures regarding round-the-clock representation for all EOC positions.

FINDING: This previous inadequacy could not be resolved during the 1989 TMI REP exercise, as Objective #34 -- demonstration of a shift change -- was not scheduled for Swatara Township.

Swatara Township EOC

TMIX85-33R:

Future exercises should demonstrate continuous manning of all positions throughout the exercise, and active participation by elected officials.

FINDING: CORRECTED

Essential EOC positions were manned throughout the exercise, with active participation by elected officials.

Swatara Township EOC

TMIX85-34R:

According to the EOC staff, a written list of mobility-impaired residents has been maintained but was not available at the EOC. This list should be maintained at the EOC, along with their particular needs to ensure the provision of timely assistance to these individuals.

FINDING: CORRECTED

A list of mobility impaired residents was available in the EOC during the exercise.

LANCASTER COUNTY

Lancaster County EOC

TMIX87-18R:

Simulated dosimetry/KI was delivered by the County to the Elizabethtown Borough EOC at 2006 for the surrounding jurisdictions. No information concerning these deliveries was passed along so they just remained there throughout the exercise. This appears to be a County problem.

FINDINGS: CORRECTED

Lancaster County has pre-distributed all self-reading dosimetry to the municipalities. Adequate supplies were verified by Federal evaluators during the exercise. The County delivered TLDs and KI supplies to the Elizabethtown EOC for pickup by municipalities at the Alert declaration in compliance with new plan procedures.

Lancaster County EOC

TMIX87-19R:

The Mt. Joy Township plan called for KI to be picked up by Township runner at Elizabethtown. The county was supposed to inform the Township that the KI had been dispatched to Elizabethtown and that the Township should pick it up. This did not occur. After the Township questioned the County, the County responded to simulate this activity. Therefore, the planned demonstration of KI distribution according to the scenario did not take place.

FINDINGS: CORRECTED

KI distribution by Lancaster County to the municipalities was accomplished in a timely manner during the 1989 exercise.

Donegal School District

TMIX85-62R:

The School District administrative staff did not demonstrate their responsibilities, and those of the risk school principal were demonstrated by an alternate. In future exercises the designated officials should participate, all aspects of the plan should be demonstrated (or simulated), and the actions should be performed in accordance with the plan procedures.

FINDINGS: CORRECTED

The plan designated District Superintendent and participating risk school Principal adequately demonstrated their responsibilities during the exercise.

Conoy Township EOC

TMIX85-48R:

Conoy Township officials implemented route alerting prematurely. The appropriate officials should receive additional training regarding the procedures for implementing route alerting, and the proper sequencing of route alerting relative to the public alert and notification system. Proper techniques regarding route alerting should be addressed in future exercises.

FINDINGS: CORRECTED

Route alerting was properly implemented (immediately after the siren activation) during the exercise.

Conoy Township EOC

TMIX85-49R:

The Conoy Township Radiological Officer failed to simulate distribution of dosimetry/KI to the EOC staff members, as specified by the plan. The Radiological Officer, and the other EOC staff members, should receive further training regarding the need for radiological exposure control for all emergency workers with assignments within the EPZ. Proper dosimetry/KI distribution should be demonstrated in future exercises.

FINDINGS: CORRECTED

Dosimetry and KI distribution to Emergency Workers and the EOC staff were adequately demonstrated at Site Area Emergency during the exercise.

Conoy Township EOC

TMIX85-50R:

The distribution of dosimetry to the Conoy Township EOC was not performed in accordance with the municipal plan. The plan should be revised, as necessary, to accurately describe the dosimetry distribution policy established by Lancaster County. In future exercises, dosimetry distribution should be demonstrated in the manner described in the plans.

FINDINGS: CORRECTED

Self-reading dosimetry is currently pre-distributed in the Township EOC. TLDs and KI were successfully obtained from the Elizabethtown EOC during the exercise, as per plan prescriptions.

East Donegal Township EOC

TMIX85-51R:

East Donegal Township officials implemented the evacuation about 35 minutes prematurely, due to confusion caused by misinterpretation of County radio messages. The appropriate Township officials should receive additional training regarding protective action implementation procedures. Proper implementation of protective actions should be demonstrated at future exercises.

FINDINGS: CORRECTED

The EOC properly coordinated the evacuation of Township residents with Lancaster County during the exercise.

East Donegal Township EOC

TMIX85-52R:

East Donegal Township officials implemented route alerting prematurely, due to misunderstanding the County's instructions. The appropriate Township officials should receive additional training regarding the procedures for implementing route alerting, and the proper sequence of such alerting relative to protective actions. Proper techniques regarding route alerting should be addressed in future exercises.

FINDINGS: CORRECTED

Route alerting was properly implemented.

East Donegal Township EOC

TMIX85-53R:

The distribution of dosimetry to the East Donegal Township EOC was not performed in accordance with the municipal plan. The plan should be revised, as necessary, to accurately describe the dosimetry distribution policy established by Lancaster County. In future exercises, dosimetry distribution should be demonstrated in the manner described in the plans.

FINDINGS: CORRECTED

Self-reading dosimeters are now pre-distributed in the Township EOC. According to the Township plan, KI and TLDs were obtained at the Elizabethtown EOC during the exercise.

Elizabethtown Borough EOC

TMIX85-55R:

The distribution of dosimetry for use by municipal emergency workers was not performed according to Elizabethtown Borough's plan. The plan should be revised, as necessary, to accurately describe the dosimetry distribution policy established by Lancaster County. In future exercises, dosimetry distribution should be demonstrated in the manner described in the plans.

FINDINGS: CORRECTED

Self-reading dosimeters are pre-distributed in the Township EOC. The County delivered adequate supplies of TLDs and KI during the exercise as prescribed by the Township and County plans.

West Donegal Township EOC

TMIX85-58R:

Full staffing of the West Donegal Township EOC was not achieved, as the Transportation Coordinator post was not filled. The EMC should assure that a qualified person is assigned to this position, and the staffing list contained in the plan should be changed, if necessary. Full first shift EOC staffing should be demonstrated in future exercises.

FINDINGS: CORRECTED

Full staffing of the West Donegal Township EOC, including backup personnel, was demonstrated during the 1989 exercise.

West Donegal Township EOC

TMIX85-59R:

Township officials activated route alerting prematurely, about 15 minutes prior to activation of sirens and EBS. The appropriate officials should receive additional training regarding the procedures for implementing route alerting, and the proper sequencing of route alerting relative to the public alert and notification system. Proper techniques regarding route alerting should be addressed in future exercises.

FINDINGS: CORRECTED

Route alerting was properly initiated at the conclusion of the siren activation, and completed in 41 minutes.

West Donegal Township EOC

TMIX85-60R:

The distribution of dosimetry to the West Donegal Township EOC was not performed in accordance with the municipal plan. The plan should be revised, as necessary, to accurately describe the dosimetry distribution policy established by Lancaster County. In future exercises, dosimetry distribution should be demonstrated in the manner described in the plans.

FINDINGS: CORRECTED

Self-reading dosimeters were pre-distributed in the EOC in compliance with plan directives. As per new procedures, TLDS and KI were retrieved from the Elizabethtown EOC during the exercise.

West Donegal Township EOC

TMIX85-61R:

The West Donegal Township emergency workers were not instructed on dosimetry use and dose recording. Suitable instruction should be provided by a qualified individual, and this should be demonstrated in future exercises.

FINDINGS: CORRECTED

Emergency workers were thoroughly briefed on the use of dosimetry, ingestion of KI, mission exposure limits, and the recording of dose readings during the exercise.

LEBANON COUNTY

South Londonderry Township EOC

TMIX85-65R:

The issue of twenty-four hour staffing for all designated staff positions needs to be resolved as quickly as possible.

FINDINGS: UNRESOLVED

This inadequacy could not be corrected as Objective #34, demonstration of a shift change, was not scheduled for South Londonderry Township during this exercise.

YORK COUNTY

Conewago Township EOC

TMIX85-70R:

Although well-intentioned, route alerting should be coordinated with siren sounding and EBS activation to ensure the public will receive specific instructions immediately upon their issuance.

FINDINGS: CORRECTED

Route alerting was initiated in proper sequence, immediately following siren activations, as specified in the plan and procedures.

Fairview Township EOC

TMIX85-72R:

Route alerting was initiated at 1940 prior to protective action decisions and activation of siren and EBS systems. Procedures for initiating route alerting should be reviewed.

FINDINGS: CORRECTED

Route alerting was initiated in proper sequence, immediately following siren activations, as specified in the plan and procedures.

Hellam Township EOC

TMIX85-73R:

Route alert teams should be dispatched in conjunction with siren sounding and EBS activation.

FINDINGS: CORRECTED

Route alerting was initiated in proper sequence, immediately following siren activations, as specified in the plan and procedures.

Lewisberry Borough EOC

TMIX85-74R:

Lewisberry Borough staff should review procedures for dispatching route alert teams in conjunction with siren and EBS activation.

FINDINGS: CORRECTED

Route alerting was initiated in proper sequence, immediately following siren activations, as specified in the plan and procedures.

Mt. Wolf EOC

TMIX87-20R:

Only one route was required to be run, however, the volunteers wanted to run two routes which they did. Neither team completed the routes within the prescribed 45 minutes. Both team drivers stated that to complete the routes to standards would have required about 75 minutes.

FINDINGS: CORRECTED

The four previous alert routes have been reconfigured into six shorter routes. One route was demonstrated during the exercise- the team was activated three minutes after siren activation, and completed the route twenty-eight minutes later.

Newberry Township EOC

TMIX85-78R:

Change 1 to the Township plan should be submitted to FEMA Region III.

FINDINGS: CORRECTED

The Township adopted a new plan in October, 1987. The most recent version, with Change 1, is dated August, 1989. This plan was used by the Township during the exercise, and was submitted to FEMA prior to the exercise, for use in evaluation.

Newberry Township EOC

TMIX85-79R:

Route alert teams were dispatched prematurely. The teams should be sent out in conjunction with the sounding of sirens and activation of EBS.

FINDINGS: CORRECTED

Route alerting was initiated in proper sequence, immediately following siren activations, as specified in the plan and procedures.

Springettsbury Township EOC

TMIX85-80R:

Route alert teams were dispatched at 1931 ahead of the siren and EBS simulated activation at 2015. Procedures for dispatching these teams should be reviewed by the county and municipal EOC staff.

FINDINGS: CORRECTED

Route alerting was initiated in proper sequence, immediately following siren activations, as specified in the plan and procedures.

Warrington Township EOC

TMIX85-81R:

Telephones should be installed in the EOC.

FINDINGS: CORRECTED

Two telephones, one cellular, were available in the EOC. The available communications capability was adequate for the volume of traffic.

York Haven Borough EOC

TMIX85-82R:

Radio equipment failure necessitated heavy reliability on backup RACES equipment. The Borough should request immediate scheduling for radio repair.

FINDINGS: CORRECTED

The emergency management radio functioned without problem during the exercise.

York Haven Borough EOC

TMIX85-83R:

Only one telephone is in place at the EOC and it is an extension of the York Haven Free Library. Recommend installation of a private phone line(s) with extension phones for critical staff members.

FINDINGS: CORRECTED

A private telephone line has been added to the EOC, for a total of three phones available for EOC use. The available communications capability was adequate for the volume of traffic.

York Haven Borough EOC

TMIX85-84R:

This was the first exercise in which York Haven has participated. Additional participation in training activities and future exercises will be beneficial for all staff persons. This was evident in the Borough's confusion over siren activation and the initiation of route alerting. When training is provided to this EOC staff, emphasis should be placed on the inter-relationships, roles and responsibilities of State and county government, along with the timing of municipal responsibilities.

FINDINGS: CORRECTED

The Borough EOC staff has received additional training, and demonstrated their understanding of the roles and responsibilities assigned to the State, county and municipal jurisdictions. In particular, Route alerting was initiated in proper sequence, immediately following siren activations, as specified in the plan and procedures.

APPENDIX ONE

PARTICIPATING JURISDICTIONS

Commonwealth of Pennsylvania

Cumberland County

West Shore School District

Lower Allen Township
New Cumberland Borough

Dauphin County

Central Dauphin School District
Derry Township School District
Harrisburg School District
Lower Dauphin School District
Middletown Area School District
Milton Hershey School District
Steelton-Highspire School District

Conewago Township
Derry Township
Harrisburg City
Highspire Borough
Hummelstown Borough
Londonderry Township
Lower Paxton Township
Lower Swatara Township
Middletown Borough
Paxtang Borough
Royalton Borough
South Hanover Township
Steelton Borough
Swatara Township

Lancaster County

Donagal School District
Elizabethtown Area School District

Conoy Township
East Donegal Township
Elizabethtown Borough
Mount Joy Township
West Donegal Township

Lebanon County

South Londonderry Township

York County

Central York School District
Northeastern School District

Conewago Township
Dover Township
East Manchester Township
Fairview Township
Goldshoro Borough
Hellam Township
Lewisberry Borough
Manchester Borough
Manchester Township
Mt. Wolf Borough
Newberry Township
Springettsbury Township
Warrington Township
York Haven Borough

Support Counties

Adams County
Berks County
Franklin County
Northumberland County
Schuylkill County
Snyder County

Remaining Counties Within the Ingestion Pathway EPZ

Chester County
Columbia County
Juniata County
Mifflin County
Perry County

Dauphin County

County EOC

S. Fina (FEMA)
S. Curtis (ANL)
F. Antkowiak (FEMA)

Reception/Mass Care Centers
Emergency Worker Decontamination

R. Thomson (ANL)
F. Wilson (ANL)

Central Dauphin School District
Derry Township School District
Harrisburg School District
Lower Dauphin School District
Middletown Area School District
Milton Hershey School District
Steelton-Highspire School District

D. Knudson (ANL)
L. Conley (ANL)
J. Sutch (CPR)
L. Zander (ANL)
J. Mitrani (ANL)
L. Malinowski (ANL)
S. Nelson (ANL)

Conewago Township
Derry Township
Harrisburg City
Highspire Borough
Hummelstown Borough
Londonderry Township
Lower Paxton Township
Lower Swatara Township
Middletown/Royalton Boroughs
Paxtang Borough
South Hanover Township
Steelton Borough
Swatara Township

F. DeGregory (FEMA)
L. Conley (ANL)
J. Sutch (CPR)
S. Reagle (FEMA)
L. Zander (ANL)
T. Majusiak (FEMA)
S. Adukaitis (FEMA)
N. Wiles (FEMA)
J. Mitrani (ANL)
D. Hammons (FEMA)
L. Malinowski (ANL)
S. Nelson (ANL)
D. Knudson (ANL)

Lancaster County

County EOC

P. Weber (FEMA)
B. Gray (FEMA)

Reception/Mass Care Center
Emergency Worker Decontamination

F. Oleson (CPR)
J. Ello (ANL)

Donegal School District
Elizabethtown Area School District

E. Robinson (ANL)
A. Teotia (ANL)

Conoy Township
East Donegal Township
Elizabethtown Borough
Mount Joy Township
West Donegal Township

E. Taylor (FEMA)
R. Shapiro (FEMA)
A. Teotia (ANL)
E. Robinson (ANL)
R. Welch (FEMA)

Lebanon County

County EOC	J. Lamb (FEMA) H. Skoczalek (FEMA)
Reception/Mass Care Centers Emergency Worker Decontamination	D. Santani (ANL) G. Goforth (CPR)
South Londonderry Township	A. Henryson (FEMA)

York County

County EOC	S. Hopkins (FEMA) W. Brzozowski (FEMA)
Reception/Mass Care Centers Emergency Worker Decontamination Medical Services	A. Justus (ANL) C. Hunkler (ANL) C. Klimczak (ANL)
Central York School District Northeastern School District	A. Justus (ANL) C. Hunkler (ANL)
Conewago Township Dover Township E. Manchester Township/ Manchester Borough/ Mt. Wolf Borough Fairview Township Goldsboro Borough Hellam Township Lewisberry Borough Manchester Township Newberry Township Springettsbury Township Warrington Township York Haven Borough	N. Furth (CPR) E. Sims (FEMA) J. Benn (FEMA) E. Smith (ANL) R. Linck (FEMA) K. Picel (ANL) R. Douglas (FEMA) N. DiTullo (CPR) D. Hall (FEMA) A. Lookabaugh (ANL) D. Bingaman (ANL) J. Moore (ANL)

SUPPORT COUNTIES

Adams County

EOC, Reception/ Mass Care Centers	G. Jacobson (ANL)
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Berks County

EOC, Reception/ Mass Care Centers	K. Flynn (ANL)
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Franklin County

EOC, Reception/ Mass Care Centers	D. Schweller (ANL)
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Northumberland County

Eoc, Mass Care Center

E. Hummel (FEMA)

Schuylkill County

EOC, Reception/Mass Care Centers

W. Kisielecki (ANL)

Snyder County

EOC, Reception/Mass Care Centers

J. Staroba (ANL)

Remaining Ingestion Pathway Counties

Chester County
Columbia County
Juniata County
Mifflin County
Perry County

T. Majusiak (FEMA)
W. Brzozowski (FEMA)
H. Skoczalek (FEMA)
D. Newsom (ANL)
C. Hunckler (ANL)