

JAN 16 1990

Docket Nos. 50-317  
50-318

License Nos. DPR-53  
DPR-69

Baltimore Gas and Electric Company  
ATTN: Mr. George C. Creel  
Vice President  
Nuclear Energy  
Calvert Cliffs Nuclear Power Plant  
MD Rts 2 & 4, P.O. Box 1535  
Lusby, Maryland 20657

Gentlemen:

Subject: Final Exercise Report of the September 14, 1989, Exercise of Off-site Radiological Emergency Preparedness Plans for the Calvert Cliffs Nuclear Power Plant

This letter transmits the Federal Emergency Management Agency (FEMA) report of the September 14, 1989 Calvert Cliffs Nuclear Power Plant full-participation emergency exercise.

The report indicates that there were no deficiencies identified, however, several areas requiring corrective action and areas recommended for improvement were identified. Based upon the results of the exercise, FEMA has determined that off-site emergency preparedness is adequate to protect the health and safety of the public at the Calvert Cliffs Nuclear Power Plant. A schedule of corrective actions is included in the exercise report which addresses the current areas requiring corrective action.

If you have any questions concerning this matter, please contact Mr. Craig Conklin of my staff at (215) 337-5342.

Sincerely,

Original Signed By:  
Ronald R. Bellamy

Ronald R. Bellamy, Chief  
Facilities Radiological Safety  
and Safeguards Branch  
Division of Radiation Safety  
and Safeguards

Enclosure: As stated

"GENERAL RECORD COPY"

9001240359 900116  
PDR ADOCK 05000317  
F FDC

11  
IET 35

Baltimore Gas and  
Electric Company

2

JAN 16 1990

cc w/encl:

W. J. Lippold, General Supervisor, Technical Services Engineering  
T. Magette, Administrator, Nuclear Evaluations  
Public Document Room (PDR)  
Local Public Document Room (LPDR)  
Nuclear Safety Information Center (NSIC)  
NRC Resident Inspector  
State of Maryland

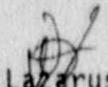
bcc:

Region I Docket Room  
Management Assistant, DRMA (w/o encl)  
Section Chief, DRP  
S. McNeil, NRR

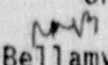
OFFICIAL OFFICE COPY

Conklyn

1/11/90

  
Lazarus

1/16/90

  
Bellamy

1/16/90



# Federal Emergency Management Agency

Washington, D.C. 20472

DEC 22 1989

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 exercise report of the September 14, 1989, exercise of offsite radiological emergency preparedness plans site-specific to the Calvert Cliffs Nuclear Power Plant. This was a full-participation exercise with the State of Maryland and Calvert, Dorchester, and St. Mary's Counties. This report was prepared by the Region III Office staff of the Federal Emergency Management Agency.

There were no deficiencies identified as a result of this exercise; however, several areas requiring corrective action and areas recommended for improvement were identified. The exercise report includes a schedule of corrective actions from the State of Maryland for the areas requiring corrective actions. Based on the results of this exercise, the offsite radiological emergency plans and preparedness remain 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 Calvert Cliffs Nuclear Power Plant, and the 44 CFR 350 approval granted on August 8, 1985, remains in effect.

If you should have any questions, please contact Craig S. Wingo, Chief, Technological Hazards Division.

Sincerely,

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

Enclosure

9001690079 1P

RADIOLOGICAL EMERGENCY PREPAREDNESS  
EXERCISE EVALUATION REPORT

FACILITY: CALVERT CLIFFS NUCLEAR POWER PLANT  
OPERATOR: BALTIMORE GAS & ELECTRIC COMPANY  
LOCATION: Lusby, Calvert County, Maryland  
REPORT DATE: December 5, 1989  
EXERCISE DATE: September 14, 1989

PARTICIPATING  
JURISDICTIONS: State of Maryland  
Calvert County  
Dorchester County  
St. Mary's County

NON-PARTICIPATING  
JURISDICTIONS: None

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

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

9001090084 82PP

## EXECUTIVE SUMMARY

This report is the post-exercise evaluation of the Radiological Emergency Preparedness Exercise of September 14, 1989 for the Calvert Cliffs Nuclear Power Plant (CCNPP). This joint, full-scale biennial exercise demonstrated the State and local response to potential offsite radiological effects from the CCNPP, based on a scenario of emergency events. The evaluation concerns the performance of emergency response professionals at the State of Maryland and in the counties of Calvert, Dorchester and St. Mary's. This exercise is mandated by Federal regulations (44 CFR Part 350) which require review and approval of State and local radiological emergency plans and preparedness.

FEMA evaluators assessed the exercise participants' performance according to radiological emergency preparedness plans and procedures. Performance of the participants is summarized in terms of three categories:

- A. Deficiencies: none were identified.
- B. Areas Requiring Corrective Action: 17 were identified.
- C. Areas Recommended for Improvement: 15 were identified.

Deficiencies are required to be promptly corrected through remedial actions. Areas Requiring Corrective Action are required to be corrected during the next biennial exercise. Areas Recommended for Improvement are advisory comments which may be of assistance to the exercise participants.

Recurring problems include the following: 1) Coordination of the Alert and Notification System amongst the three Plume Zone Counties could be improved further; and 2) some of the Field Air Sampling Team procedures and information require further revision. A list of recommended corrective actions is included in this report.

Twelve (12) of the seventeen (17) problem areas identified from the 1987 exercise were corrected. Three (3) of the previous problem areas were not corrected in this exercise. The other two (2) problem areas will require a scenario which tests those particular capabilities, so were deferred until the 1991 exercise.

This exercise included twenty-four of FEMA's thirty-seven radiological emergency preparedness objectives. All thirty-six objectives applicable to Maryland must be met within a six year cycle.

## TABLE OF CONTENTS

	<u>P.</u>
EXECUTIVE SUMMARY	i
I. INTRODUCTION	1
II. OBJECTIVES	3
A. Potential Objectives	
B. Selected Objectives	
C. Objectives Not Adequately Demonstrated	
III. EXERCISE SCENARIO AND CHRONOLOGY	12
IV. DETAILED EXERCISE RESULTS	14
A. Exercise Reports	
1. Maryland State Level	14
2. County Level	22
B. Status of Previous Inadequacies	36
V. SUMMARY LIST OF ISSUES	44
A. Explanation of Categories	
B. Findings	
1. Areas Requiring Corrective Action	45
2. Areas Recommended For Improvement	62
APPENDICES	
A. EXERCISE PARTICIPANTS	77
B. EVALUATOR ASSIGNMENTS	78
C. REGIONAL LOCATION MAP	79

## I. INTRODUCTION

### A. BACKGROUND.

Radiological Emergency Response Preparedness exercises help to protect public health and safety in the vicinity of commercial nuclear power plants. The exercises demonstrate capabilities to respond to the offsite effects of a radiological emergency which may occur at a commercial nuclear power facility. These periodic exercises test: 1) the integrated capability of organizations to respond; and 2) most of the basic elements existing within emergency preparedness plans and organizations. The exercises indicate the efforts by State and local authorities to mobilize personnel and resources, in order to protect public health and safety. The exercise scenarios warrant the implementation of protective actions up to and including evacuation. This was the fifth full participation exercise for the operator of the Calvert Cliffs Nuclear Power Plant and the various State, local, and volunteer off-site response organizations.

The purpose of this report is to record the capabilities of State and local governments to respond to an accident at the Calvert Cliffs Nuclear Power Plant based upon the actual demonstration or simulation of their abilities during the September 14, 1989 joint, full participation exercise. This report identifies inadequacies in preparedness and response capabilities. This report recommends corrective actions which will help to improve preparedness and response capabilities.

The exercise was evaluated by a team made up of individuals from FEMA Region III, along with representatives of the Regional Assistance Committee Agencies, Argonne National Laboratory, Center for Planning and Research, and the American Red Cross.

### B. FEDERAL EVALUATION CRITERIA.

Federal evaluation criteria for this exercise consisted of the planning standards and procedures in the following document:

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.

### C. STATE AND LOCAL PLANS.

State and local radiological emergency response plans, prepared pursuant to NUREG-0654/FEMA REP-1, Rev. 1, include the following:

1. The State of Maryland Radiological Emergency Plan, Fixed Nuclear Facilities, Annex Q to the Maryland Disaster Assistance Plan, with revisions through February 1988.
2. Maryland Disaster Assistance Plan, Appendix 1 to Annex Q, Radiological Emergency Plan, Calvert Cliffs Nuclear Power Plant, with revisions through March 1988.
3. Plans and Procedures of Maryland state agencies which are mandated to respond to radiological emergencies.
4. Calvert County Radiological Emergency Standard Operating Procedure, with revisions through November 1986.
5. Calvert County Emergency Operations Plan, October 1988.
6. Dorchester County Radiological Emergency Standard Operating Procedure, with revisions through August 1983.
7. Dorchester County Emergency Operations Plan, August 1988.
8. St. Mary's County Radiological Emergency Standard Operating Procedure, July 1989.
9. St. Mary's County Emergency Operations Plan, September 1988.

The Maryland Emergency Management Agency, as authorized by Article 16A of the Annotated Code of Maryland (Civil Defense and Disaster Preparedness Act), developed the State plan.



## II. OBJECTIVES

### A. POTENTIAL OBJECTIVES.

The Calvert Cliffs 1989 Exercise Objectives are derived from a list of 37 potential Objectives. The Objectives are selected based upon the plant's off-site emergency preparedness requirements for this particular exercise. Not all 37 Objectives are tested during each exercise. All applicable Objectives must be met within a six-year cycle.

### B. SELECTED OBJECTIVES.

The following is the complete list of Objectives, with this exercise's applicable Objectives indicated by an asterix. Objectives are classified in three groups. Within each group, there are sub-groups of related Objectives. Each Objective is cross-indexed to NUREG-0654/FEMA-REP-1, Rev. 1, Evaluation Criteria. Group A Objectives, numbers 1-15, are core Objectives that are to be demonstrated in each biennial exercise. Group B Objectives are scenario-dependent; they may not all be demonstrated during any given exercise. Group C Objectives are in a category which must be demonstrated at least once every six years.

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 (ECLs) 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<br>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<br>E.4 |
|--|------------|

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 radioiodine concentrations as low as 10 to -7 microcurie per cubic centimeter 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 DECISIONMAKING

- \*11. Demonstrate the ability to make appropriate protective action decisions, based on projected or actual dosage, Environmental Protection Agency (EPA) Protective Action Guides (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 Emergency Planning Zones (EPZs) 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 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.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, Food and Drug Administration 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 Emergency Operation Centers (EOCs), mobilize staff that report to the EOC's, establish communications linkages and complete telephone call down) during an unannounced and/or 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. C.5,  
N.1.b

**CALVERTY CLIFFS 1989 EXERCISE  
GR 11-3 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	UR	OH		
<b>STATE OF MARYLAND</b>																																						
STATE EMERGENCY OPERATIONS CENTER	X	X	X	X	X						X	X	X	X	X																							
FIELD AIR SAMPLING TEAMS		X		X		X	X	X	X																													
JOINT INFORMATION CENTER	X	X	X	X	X									X	X																							
EMERGENCY OPERATIONS FACILITY/ACCIDENT ASSESSMENT CENTER	X	X	X	X	X					X	X					X																						
CALVERTY COUNTY EMERGENCY OPERATIONS CENTER	X	X	X	X	X	X						X	X	X	X	X	X																					
TRAFFIC/ACCESS CONTROL				X	X															X																		
EMERGENCY WORKER DECONTAMINATION		X		X	X																					X												
MEDICAL SERVICES				X	X																		X	X														
SCHOOLS					X															X																		
MASS CARE			X	X																	X	X																

NOTES: Net Objective: X = Yes; O = No      Objective 17 not applicable to Region III      Objective 36: UR = Unannounced Exercise; OH = Off-Hours Exercise

**CALVERT CLIFFS 1989 EXERCISE**  
**GD BY-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	OH		
DORCHESTER COUNTY EMERGENCY OPERATIONS CENTER	X	X	X	X	X	X						X	X	X	X	X	X																					
TRAFFIC/ACCESS CONTROL				X		X														X																		
EMERGENCY WORKER DECONTAMINATION				X		X																		X														
BASS CABE				X		X															X	X																
ST. MARY'S COUNTY EMERGENCY OPERATIONS CENTER	X	X	X	X	X	X						X	X	X	X	X																						

NOTES: Net Objective: X = Yes; O = No      Objective 17 not applicable to Region III      Objective 36: UN = Unannounced Exercise; OH = Off-Hours Exercise

10



**C. OBJECTIVES NOT ADEQUATELY DEMONSTRATED.**

All Objectives were adequately demonstrated during this exercise. Details are included in the individual exercise reports given in Section IV. of this report.

### III. EXERCISE SCENARIO AND CHRONOLOGY

#### A. SCENARIO

At 0700 hours, Calvert Cliff Nuclear Power Plant (CCNPP) Unit 1 was at 100% power, but the power level was about to decrease because of a greater than ten (10) gallon per minute leak from the Reactor coolant system. Unit 2 was in cold shutdown, day 39 of a 100 day outage. An investigation was underway to locate the source of Reactor Coolant system leakage.

A traffic accident occurred at the intersection of Route 2/4 and Calvert Cliffs Road at approximately 0745 hours. A truck loaded with radioactive material struck a passenger car. The driver of the car, a Baltimore Gas & Electric Company employee, was injured and contaminated in the accident. The Calvert County 911 was notified and an ambulance was dispatched from the St. Leonard Volunteer Fire Department and Rescue Squad. The Calvert County Health Department was notified and dispatched radiological monitors. The County requested additional monitoring assistance from CCNPP. The contaminated injured victim was transported to Calvert Memorial Hospital.

At approximately 0830 hours, a leak was detected in CCNPP Unit 1 Containment Structure. CCNPP declared an ALERT. At approximately 0900 hours, CCNPP Unit 1 Reactor power level was decreased to 75%. CCNPP started repairing leaking penetrations in the Unit 1 Containment Structure.

At approximately 1015 hours, the CCNPP Condensate Storage tank ruptured. The plant declared a SITE EMERGENCY. By approximately 1025 hours, the Unit 1 Containment leaking penetrations were sealed.

The CCNPP Unit 1 Reactor tripped (automatic shut down) at approximately 1045 hours. CCNPP experienced difficulty in adding sufficient coolant to the Reactor (Loss of Coolant Accident) due to inoperability of all three High Pressure Safety Injection pumps. The plant declared a GENERAL EMERGENCY. By 1215 hours, CCNPP reported that coolant level continued to decrease in the Unit 1 Reactor. Reactor temperature continued to rise. The Reactor core was expected to be uncovered in approximately one hour. By 1320 hours, the Reactor core was uncovered, and fuel melt was imminent.

At approximately 1330 hours, radioactive release began from the plant. CCNPP established coolant flow to the core, and core temperatures were decreasing. A rapid increase in containment radiation levels occurred. By 1350 hours, a 5 mR/hr gamma dose rate was detected at the plant site boundary. There was a 20 Rem/hr thyroid dose rate (radioiodine) at the plant site boundary. The wind was toward the east at 7.8 mph. Also at this time, CCNPP suspected that previously sealed Containment penetrations were leaking again. By 1400 hours, a 20 mR/hr gamma dose rate was detected at the plant site boundary. The wind was towards the east north east at 13.2 mph. State field monitoring teams were attempting to define the 7 mR/hr gamma dose rate detected on Taylor's Island, Dorchester County.

## B. CHRONOLOGY

Projected Time		Actual Time
0700	Unusual Event	0720
0745	Traffic accident	0758
0830	Alert	0831
1015	Site Area Emergency	0945
1115	General Emergency	1132
	State Protective Actions	1210
		1229
		1335
1600	Exercise Termination	1544

## IV. DETAILED EXERCISE RESULTS

### A. EXERCISE REPORTS

The following exercise reports are organized by jurisdiction, starting at the State level and finishing at the County level. Each jurisdiction was evaluated based upon FEMA GM EX-3 Objectives selected for this exercise. The status of Objectives from previous exercises is given in Section IV.B. An issue-by-issue summary listing, with space for State response, is found in Section V.B.

#### 1. MARYLAND STATE LEVEL.

##### STATE EMERGENCY OPERATIONS CENTER

Objective 1, the ability to monitor, understand and use Emergency Classification Levels (ECLs), was adequately demonstrated. The EOC received prompt notification of the ECLs, with the exception of Site Area Emergency, which was delayed by the utility for about 35 minutes.

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

Objective 3, the ability to direct, coordinate and control emergency activities, was adequately demonstrated. The MEMA Director, assisted by the Assistant Director (acting as the Operations Officer), demonstrated effective leadership. The staff were kept well-informed through numerous briefings, which were broadcast over the Public Address system.

Objective 4, the ability to communicate with all appropriate locations, organizations and field personnel, was adequately demonstrated. A radio backup to the dedicated telephone link with the utility has been installed since the previous exercise. The EOC has sufficient redundancy to assure back-up capability for the primary links.

Objective 5, facilities, equipment, displays and other materials, were adequate to support emergency operations. Access to the facility was properly controlled.

Objective 11, the ability to make appropriate protective action decisions (based on projected or actual dosage, EPA PAG's, availability of adequate shelter, evacuation time estimates and other relevant factors), was adequately demonstrated. The State's Protective Actions (PAs) were developed at the EOF by the

Accident Assessment Center staff, under the direction of the Acting Secretary of the Maryland Department of Environment (MDE). MDE representatives at the State EOC were in continuous contact with the AAC, and participated appropriately in the PAR decision-making process. The MDE Acting Secretary conferenced with State and County EOCs via the dedicated (red) phone and described the actions he was considering. The MEMA Director and Governor's representative, participating at the State EOC, provided their concurrence to the protective actions being considered by the MDE Acting Secretary, who then made the decisions official. Following the initial decision, there were two more phases of protective action decisions as conditions changed.

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 official(s), was adequately demonstrated by State officials at the EOC, to the extent required by the plan and policy. In accordance with the policy, State officials did not take an active role in directing or coordinating the activation of the public Alert and Notification system. This is considered to be a County responsibility, per Appendix Q-1, Attachment 3.6-8. State actions were limited to activating the Emergency Broadcast System, and providing a general EBS message to the primary EBS station, via the Rescue Pickup Unit at the EOC, regarding the initial State-level protective action decision. This was completed within 10 minutes of the MDE Acting Secretary's decision.

Although the Plume Zone Counties successfully demonstrated the 15-minute A&N system activation capability one time during General Emergency, a coordinated and simultaneous activation of the sirens did not occur throughout the EPZ at other times. FEMA has previously urged the State to take the lead role in establishing and coordinating an A & N system activation procedure, but it is recognized that this may not be feasible. FEMA now recommends that County officials develop a mutually acceptable procedure for the coordinated activation of the public Alert and Notification system, to be included in the plans. It is recommended that the procedure provide for the simultaneous activation of the A&N system throughout the EPZ, whenever possible or practical.

It is further recommended that the procedure specify an appropriate means of communication, in order to avoid the following situation which occurred during the exercise. After the MDE Acting Secretary's initial protective action decision, the utility continued to use the dedicated notification line to discuss on-site evacuation, thus blocking the Counties ability to use the link to coordinate the siren activation.

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 supported by the public information staff at the State EOC. In accordance with the plans, the actual formulation and dissemination of such EBS messages providing specific information and instructions to the public is a County, rather than a State EOC responsibility. The Public Information staff at the State EOC supported this activity by assisting in the decision process and providing information concerning State actions.

Objective 14, the ability to brief the media in an accurate, coordinated and timely manner was adequately supported by the public information staff at the State EOC, in accordance with the plan. The only direct interaction with the news media occurred after the Alert declaration (prior to the activation of the Joint Media Center), when the State EOC Public Information Officer issued an appropriate news release. The responsibility for preparing finished news releases and conducting media briefings moved to the JMC after that facility became operational, and the State EOC public information staff supported the activity by providing information concerning State actions. The transfer of such information from Operations to the Public Information staff was very good.

Objective 15, the ability to establish and operate rumor control in a coordinated and timely fashion was adequately demonstrated. The two rumor control staff members answered nineteen calls during the exercise, using four of the six available telephone lines (two lines were not activated). The rumor control staff, physically separated from both Operations and the PIO by a long hall, did not always receive status updates and other information in a timely manner. Specifically, their receipt of the Site Area Emergency declaration occurred more than an hour after the EOC was notified, and the General Emergency notification was delayed about thirty minutes. The Public Address system had reportedly been turned off, and information was transferred from the PIO by messenger.

## ACCIDENT ASSESSMENT CENTER/EMERGENCY OPERATIONS FACILITY

Objective 1, the ability to monitor, understand and use emergency classification levels, was adequately demonstrated. The utility's Site Emergency Coordinator actively involved the State representatives at the EOF in the decision process for classifying conditions. As noted under the State EOC report, the utility's official Site Area Emergency notification to offsite jurisdictions did not occur until almost 35 minutes after the declaration.

Objective 2, the ability to fully alert, mobilize and activate personnel, was adequately demonstrated. The State's Accident Assessment Center at the EOF was staffed by representatives for technical and media information, dose and accident assessment, field team deployment and control, and determining protective action recommendations. Staff were knowledgeable and responded promptly.

Objective 3, the ability to direct, coordinate and control emergency activities of the AAC was effectively demonstrated by the MDE Acting Secretary. Protective Actions for the general population were properly coordinated with the State and County EOCs, via conference calls.

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 at the EOF were adequate to support AAC emergency operations.

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 at the Accident Assessment Center. Field teams were directed to the projected plume area, and field team input was used to verify projections. Agreement with the utility's dose projections was verified through frequent comparisons. Wind direction and speed were factored into the calculations. The Department of Energy was contacted, and plans were devised to use a helicopter for over-water measurements. A mobile lab was brought on-site for rapid analysis and confirmation of field sample results.

Objective 11, the ability to make appropriate Protective Action Recommendations (PARs), based on projected dosage, EPA PAGs, availability of adequate shelter, evacuation time estimates and other relevant factors, was adequately demonstrated by the

Accident Assessment group. The MDE Acting Secretary and staff interacted with the utility's EOF staff in formulating the State's protective actions. The Maryland staff were kept continually apprised of plant and meteorological conditions. Changes in status were used to determine the need for protective action updates, following the initial determination. The decision process worked well. The MDE Acting Secretary, using the conferencing line, advised the State and County EOCs simultaneously of the protective actions he was considering. Following discussion, and concurrence by officials at the State EOC (the Governor's representative and MEMA Director), the Acting Secretary made the determinations official.

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 AAC to the extent required by the plan and scenario events. The decision to recommend the use of KI was the responsibility of the MDE officials at the AAC. Their recommendation was limited to field air monitoring teams, and thus did not affect emergency workers outside of the MDE.



## FIELD AIR SAMPLING TEAMS

Objective 2, the ability to fully alert, mobilize and activate personnel was adequately demonstrated. Two teams were activated and deployed, one to the Eastern Shore of the Chesapeake Bay, and one to the Western Shore. The Accident Assessment Center (AAC) activated the teams, which were dispatched from the Center for Radiological Health, Maryland Department of the Environment in Baltimore.

Objective 4, the ability to communicate with all appropriate locations, organizations, and field personnel was adequately demonstrated. The teams' vehicles were equipped with dual channel radios that served as the primary means of communications with the AAC (at the EOF) and all appropriate locations. Backup systems available included cellular telephone, hand-held radio, and public telephones.

Objective 6, the ability to continuously monitor and control emergency worker exposure was adequately demonstrated. All appropriate equipment and related supplies were distributed, including new digital dosimeters with alarm. The Eastern Shore team were knowledgeable of operating procedures, and demonstrated proper exposure control practices; the Western Shore team did not demonstrate periodic reading of their dosimeters, and were not familiar with SOP 4.0 concerning actions for exposures of 12 Rem.

Objective 7, the appropriate equipment and procedures for determining field radiation measurements, as identified in the plan, were adequately demonstrated. Both teams had the appropriate instruments, but the Western Shore Team did not have radioactive check sources to determine the proper operation of the survey instruments, and to set up the dual channel analyzer. Both teams performed monitoring in accordance with the SOP, but the SOP had not been revised to incorporate procedural changes identified in the previous exercise. In addition, the probes of the survey and analyzing instruments were not enclosed in thin plastic to minimize contamination. While the Eastern Shore team located the monitoring points without difficulty, the Western Shore team had problems finding some of the points, because the maps had outdated information and insufficient detail.

Objective 8, the appropriate equipment and procedures for the measurement of airborne radioiodine concentrations as low as 10<sup>-7</sup> microcuries per cc in the presence of noble gases, was adequately demonstrated by the field teams. The Eastern Shore team demonstrated proper procedures for using the appropriate sampling equipment, which had been calibrated and labelled. The Western Shore team's equipment was last calibrated in 1981, and

the silver zeolite cartridges were not properly sealed. The team also did not use a fixed (reproducible) geometry when counting both the air and particulate sample. The air sampling procedures should be modified to assure that a sufficient volume of air is drawn through the sample media, and that the air sample media is purged with fresh air (or nitrogen) in a low-background area. Additional equipment should also be included in the teams' kits, including tweezers for filter removal and towelettes for decontaminating the filter holder on the air sample pump.

Objective 9, the ability to obtain samples of particulate activity in the airborne plume and promptly perform laboratory analyses, was adequately demonstrated. Delivery of a particulate filter to the state's laboratory in Baltimore, as directed by the AAC personnel, was simulated. Team members were familiar with the procedures to be followed.

## JOINT MEDIA CENTER

Objective 1, the ability to monitor, understand and use emergency classification levels, was adequately demonstrated at the Joint Media Center (JMC).

Objective 2, the ability to fully alert, mobilize and activate personnel for emergency functions at the JMC was adequately demonstrated. The JMC was fully staffed by representatives of the State Police, MEMA, National Guard and other State agencies, as well as clerical support personnel, in accordance with the plan. A liaison was sent to the EOF.

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. A wide array of communications equipment was available and used, including dedicated and commercial phone lines, cellular phone, and three telefax machines.

Objective 5, the adequacy of facilities, equipment, and displays to support emergency operations, was effectively demonstrated. The State trailer at the JMC was sufficiently equipped and supplied, but space was limited for the large number (twenty-six) of State agency representatives who occupied it.

Objective 14, the ability to brief the media in an accurate, coordinated and timely manner, was adequately demonstrated. Five briefings were conducted for the media, each involving 5-6 staff members. Effective use was made of status boards and other graphics during the briefings. The seven State news releases were timely, but several contained inappropriate and/or insufficient information. Release #4 referred to the "Plume zone" when, in fact, no release had occurred, and release #7 did not identify protective action areas in terms of landmarks or boundaries familiar to the public.

Objective 15, the ability to establish and operate rumor control in a coordinated and timely fashion, was adequately demonstrated. Rumor control was activated promptly and operated by two staff members who had access to current, accurate information.

## 2. COUNTY LEVEL.

### A. CALVERT COUNTY

#### **CALVERT COUNTY EMERGENCY OPERATIONS CENTER**

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 exercise scenario, 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 excellently demonstrated. The Emergency Management Chief (EMC) effectively managed the staff's emergency operations, including frequent briefings and direct instructions to the appropriate staff members.

Objective 4, the ability to communicate with all appropriate locations, organizations, and field personnel, was adequately demonstrated. The Communications Center worked well with the EMC and staff.

Objective 5, facilities, equipment, displays, and other materials are adequate to support emergency operations. The County EOC, located in the basement annex of the County Courthouse, was renovated approximately two years ago and can support extended operations. The County emergency communications center, which contains most of the emergency communications equipment, is an excellent, fully-equipped center containing more than adequate communications capabilities. A backup generator ensures continuing electrical power to the EOC. Status boards were posted in a clearly visible location and were updated frequently.

Objective 6, the ability to continuously monitor and control emergency worker exposure, was adequately demonstrated. The various emergency worker organizations (State Police, School personnel, Mass Care workers) came to the EOC and picked up the necessary dosimetry for their operations. The County maintains the supplies while each response agency is responsible for picking up the dosimetry and recordkeeping forms. There was an ample supply of monitoring equipment. Emergency workers received a six page information packet, with record keeping space, KI information and other forms. There was no quick reference to call in values for emergency worker dosimeter readings.

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 official(s), was adequately demonstrated.

The Initial Notification of General Emergency occurred by conference call with the utility, State and contiguous Counties, lasting from 1135 to 1142 hours. The utility recommended sheltering in a two mile radius, with additional sheltering out to five miles for Sectors Q, R, A, B, and C. Calvert County sounded its sirens and initiated an appropriate EBS message at 1140 hours. These protective actions were in accordance with plans and procedures (Annex Q, Section 5.4.2.4; Appendix Q-1, Section 3.1.5.2.4; Calvert County SOP Implementation, Section 8.g.(3).; and SOP Attachment #1). No other Counties took these measures at this time.

At approximately 1210 hours, Calvert County EOC received recommendations, via conference call from the MDE Acting Secretary, to evacuate up to two miles for all sectors (which actually affected only Calvert County and part of the Chesapeake Bay). Calvert County's plan (cited above) calls for the Secretary of the Environment, based upon dose assessment values and plant parameters provided by CCNPP and independent calculations by the Accident Assessment Center, to recommend protective actions. At that point, the President of the Board of County Commissioners may make decisions exclusively for Calvert County. The County exercised its option to make protective action decisions. Calvert County implemented public alerting procedures approximately twenty minutes after being notified by the MDE Acting Secretary.

The procedures for alerting the public were initiated again at 1229 hours when Calvert County EOC received an order from the MDE Acting Secretary to shelter in a ten-mile radius. Sirens were sounded (simulated) at 1230 hours with EBS activation following at 1233 hours.

Objective 13, the ability to coordinate the formulation and dissemination of accurate information and instructions to the public in a timely fashion, was adequately demonstrated. Calvert County demonstrated the capability to provide appropriate instructions regarding protective actions. The EBS messages contained shelter and evacuation instructions for the public. The Assistant PIO (at the EOC) coordinated frequently with the PIO (at the Joint Media Center), relaying decisions by the Calvert County Commissioners.

Objective 14, the ability to brief the media in an accurate, coordinated and timely manner, was adequately demonstrated. The PIO (who was the County Administrator) went to the Joint Media Center during the Alert phase. The Assistant PIO kept in constant contact with the PIO via telephone. The Assistant PIO relayed the key directions of the County Commissioners and EMC as soon as they were made, and prepared the appropriate press releases and EBS messages.

Objective 15, the ability to establish and operate rumor control in a coordinated and timely fashion, was adequately demonstrated. Calls came in to the EOC switchboard operators, who routed them to the EMC for disposition.

Objective 16, the ability to make the decision to recommend the use of Potassium iodide (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. During this exercise, the County Health Officer and the Radiation Officer made the decision not to issue KI.

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 transit-dependent, special needs and handicapped populations were noted on up-to-date lists and could be contacted by telephone and route alerting.

#### **TRAFFIC/ACCESS CONTROL**

Objective 4, the ability to communicate with all appropriate locations, organizations and field personnel, was adequately demonstrated. The State Police's standard mobile radio system adequately met their needs.

Objective 6, the ability to continuously monitor and control emergency worker exposure, was adequately demonstrated. The State Police issued and used two types of dosimetry, but did not have the low range (0-200 mR) self-reading dosimeters. Officers understood how to read and evaluate the dosimeter measurements. KI issuance was simulated and the officers were advised that they would only use KI upon orders from State health officials. Radiological protective measures could be improved by: requiring State Police responders to wear protective clothing (such as rain gear), and instructing officers to take shelter in their closed vehicles whenever their traffic control responsibilities do not require them to be physically on the road.

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 State Police officers assigned to the EOC had an excellent understanding of the exercise scenario and demonstrated the ability to provide appropriate support as the exercise progressed. Barracks "U" supported the officers at the EOC and provided an informative briefing to all officers that had TCP/ACP assignments. The officers were fully familiar with their traffic responsibilities, evacuation routes, and locations of Mass Care, Reception and Decontamination Centers.

#### **EMERGENCY WORKER DECONTAMINATION**

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 (EW) decontamination station was staffed by one County and one State Police officer; the EW vehicle decontamination station was manned by landfill employees.

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. At the EW Decontamination Station, the State Police Officer had only two of the six information sheets. Attention to periodic readings of SRDs was not always demonstrated. The call-in values listed in the plan and County EOC Status Board (1 rem) were not listed in the EW reference packet.

Objective 25, facilities, equipment, supplies, procedures and personnel for decontamination of emergency workers, equipment and vehicles and for waste disposal were adequately demonstrated. The EW Decontamination Station had plastic sheeting on the floor for contaminated EWs to walk on. Nothing was on the floor near the shower to be changed when the contaminated individual stepped into the shower and then stepped out. It is suggested that protective covering be placed on the floor near the shower stalls. The EW vehicles would be driven to the County landfill for surveying and decontamination. Surveying of EWs and vehicles was deliberate and satisfactory. The County Emergency Plan calls for the EW decontamination to be demonstrated at the Prince Frederick Volunteer Fire Department (VFD). On the day of the exercise, a bloodmobile was at the VFD, so the EW decontamination demonstration occurred at the Armory.

## MEDICAL SERVICES

Objective 4, the ability to communicate with all appropriate locations, organizations and field personnel, was adequately demonstrated. Effective communications were demonstrated between the St. Leonard Fire and Rescue Squad, the Calvert Memorial Hospital and the County Court House.

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

Objective 23, vehicles, equipment, procedures and personnel for transporting contaminated, injured or exposed individuals, was adequately demonstrated. The survey instrument used by the St. Leonard Fire and Rescue Squad personnel was equipped with earphones for more efficient surveying technique. The ambulance personnel took proper procedures to prevent cross contamination during the transportation and transfer of the patient at the hospital. Hospital security was available until the ambulance personnel were surveyed and released.

Objective 24, medical facilities, equipment, procedures and personnel for handling contaminated, injured or exposed individuals, was adequately demonstrated. The Calvert Memorial Hospital team provided a smooth, efficient demonstration of the facility's adequacy as well as their own capabilities for treating contaminated/injured patients. The Radiological Monitor during this exercise was supplied by the power plant, but the hospital had two alternates available on the call-in sheet, the staff Radiologist and the Nuclear Medicine Technician, who are capable of surveying. A portable x-ray machine was brought into the emergency decontamination room by the x-ray staff to x-ray the head of the injured patient. Appropriate measures were taken to protect the x-ray plate from exposure from any radiological contamination source.

## SCHOOLS

Objective 6, the ability to continuously monitor and control emergency worker exposure, was adequately demonstrated. Each bus driver was given a 0-200 mR dosimeter and a TLD, but they did not have a mid-range (0-20 R) dosimeter. The 0-200 mR dosimeters issued to the bus drivers by the Assistant Transportation Officer were not zeroed (the hair line was off scale). This officer and the bus drivers were not familiar with using the charger and zeroing the dosimeters.

Objective 19, the ability and resources necessary to implement appropriate protective actions for school children within the plume EPZ, was adequately demonstrated. The Calvert County School District Assistant Superintendent, who arrived in the



County EOC during the Alert phase, ordered the evacuation of the Southern Middle School immediately when the decision to evacuate out to two miles was announced in the EOC (1145 hours). The School District Transportation Officer initiated implementation from the EOC. His assistant came to the EOC to pick up dosimetry and met the buses at the school. Each bus driver was given an information packet, was instructed on reading dosimeters, and was told their destination. The Transportation Assistant instructed the drivers on their routes and frequency of reading dosimeters (every half hour). The Southern Middle School principal met the buses outside and was prepared to initiate evacuation. No students were evacuated for this demonstration. The principal, who had been at the school for two years, was not aware of any training/orientation for the teachers regarding their role in an radiological emergency evacuation.

#### **MASS CARE**

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.

Objective 21, procedures, facilities, equipment and personnel for the registration, radiological monitoring and decontamination of evacuees, was adequately demonstrated. The radiological monitoring team demonstrated their mission in an exemplary fashion. The Department of Social Services personnel responsible for registration needed further briefing. Their overall "common sense" approach did enable them to meet the minimum standards required.

Objective 22, facilities, equipment and personnel for congregate care of evacuees, was adequately demonstrated. The Methodist Church, used in this exercise as a back-up facility, has no feeding or bathing facilities, so this facility should not be used as a congregate care center.

## B. DORCHESTER COUNTY

### DORCHESTER COUNTY EMERGENCY OPERATIONS CENTER

Objective 1, the ability to monitor, understand and use emergency classification levels, was adequately demonstrated. Dorchester County EOC was not notified of the upgrade to Site Area Emergency for 34 minutes (1019) after it was declared (0945).

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

Objective 3, the ability to direct, coordinate and control emergency activities, was adequately demonstrated. The Dorchester County Commissioners were fully involved in the exercise and the decision-making process. Specifically, a sound decision was made to evacuate Smithville and Taylor's Island based on the facts at hand. The Commissioners were also deeply involved in the preparation and authorization of all EBS announcements and press releases. The Civil Defense Director was appointed in August, 1989; the plan should be updated to reflect this appointment.

Objective 4, the ability to communicate with all appropriate locations, organizations and field personnel, was adequately demonstrated. The communications officer identified a need to replace the County radio equipment to the County Commissioners. Radios are over twenty-five years old and are kept functioning with the extensive use of repeaters in the County.

Objective 5, facilities, equipment, displays and other materials, are adequate to support emergency operations. Although space in the EOC was limited, the space was efficiently arranged for maximum usage. The emergency classification levels were posted on the status board; however, other significant information such as EOC staffing completion, activation of any field activities, siren and EBS activations, all protective actions decisions, route alerting, evacuation completion times, etc., was not included.

Objective 6, the ability to continuously monitor and control emergency worker exposure, was adequately demonstrated. The radiological exposure control procedures in Dorchester County were comprehensive. Kits have been pre-packaged which contain all appropriate materials (4 dosimeters, two of each type for backup, TLDs, instructions, and record keeping forms). The radiological officer and his deputy were highly capable.

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 official(s), was adequately demonstrated. The alert and notification system was activated (simulated) twice in Dorchester County at 1030 and 1230 respectively. As called for in Appendix Q-1, Section 4.1.5.1.3, the County Commissioners, after receiving notification of Site Area Emergency at 1019, made the decision at 1025 to activate the sirens and EBS. This action was coordinated with the State EOC and other risk Counties via telefax and telephone. The activation of the sirens occurred at 1030, with the appropriate EBS message following at 1033.

All three risk Counties coordinated their siren and EBS activation at General Emergency following direction from the MDE Acting Secretary. Dorchester County decided to evacuate their portion of the EPZ (instead of shelter as ordered by the MDE Acting Secretary) at 1229. The sirens were sounded at 1230 followed by the appropriate EBS message at 1237. Door-to-door notification to hearing impaired residents was simulated at each siren activation.

Objective 13, the ability to coordinate the formulation and dissemination of accurate information and instructions to the public in a timely fashion, was adequately demonstrated. Seven EBS messages and press releases were prepared and disseminated (simulated) to the public by the PIO in Dorchester County. Releases were coordinated with appropriate officials at the State EOC and other risk Counties via telefax.

Objective 14, the ability to brief the media in an accurate, coordinated and timely manner, was adequately demonstrated. The PIO was present for all conference calls over the dedicated telephone and thus had access to the most current information. No media were present at the County EOC, but the County Commissioners conducted a media briefing at 1423. Information used during the media briefing was gleaned from the EBS messages, press releases and conference calls. The County had no media kits but copies of all news releases were available.

Objective 15, the ability to establish and operate rumor control in a coordinated and timely fashion, was adequately demonstrated. Rumor Control telephone numbers were published in a news release by the Joint Media Center. Several rumor control calls were received in the County EOC. The PIO traced the information source and returned calls promptly providing correct information to the callers.

Objective 15, the ability to make the decision to recommend the use of Potassium iodide (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. A decision was made at the County EOC by the County Department of Health in concurrence with the Radiological Officer to authorize the use of KI, based on information received by conference call. At 1500 a message was sent to all emergency workers to go to their dispatch points to receive KI. Procedures will be changed so that KI will be included in the pre-packaged dosimetry kits provided to emergency workers at the start of their field assignments. This will eliminate the necessity of recalling emergency workers to the dispatch points to receive KI.

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. At 1230 an actual evacuation of seven residents was demonstrated. The County Sheriff's Department dispatched a driver to Taylor's Island at 1300 to ensure that all residents had evacuated. Schools in the area were informed that all children living in the evacuated area were to be taken to the Mass Care Center at the Church Creek Fire Department. Door-to-door notifications of the hearing impaired residents were accomplished at 1030 and 1230.

#### **TRAFFIC/ACCESS CONTROL**

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.

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 Traffic Control point was established at the intersection of Highway 335 and Highway 16. Cars were actually stopped and the officers informed the drivers of the exercise and where they would be sent for registration and mass care. It was evident that emergency workers were capable.

## **EMERGENCY WORKER DECONTAMINATION**

Objective 4, the ability to communicate with all appropriate locations, organizations and field personnel, was adequately demonstrated. Emergency Worker (EW) decontamination would be carried out at the South Dorchester High School, which is equipped with seven commercial lines with conference capability, with Police/Health Department Radio Nets as backup. The alternate location for the Emergency Worker Decontamination Station has a single line telephone capability with Fire Radio net as backup.

Objective 6, the ability to continuously monitor and control emergency worker exposure, was adequately demonstrated. A distribution point for radiological exposure control equipment was set up at the EW Decontamination Station. All emergency workers were provided a kit (instruments and instructions) and were knowledgeable of the exposure limits and other procedures.

Objective 25, facilities, equipment, supplies, procedures and personnel for decontamination of emergency workers, equipment and vehicles and for waste disposal were adequately demonstrated. The EW Decontamination Station functions were demonstrated at the Church Creek Volunteer Fire Station. CDV-700 survey meters were provided for monitoring of personnel and equipment. These instruments were in working order; however there were no calibration stickers on the instruments. Emergency Workers indicated that these instruments were replaced every six months by the Calvert Cliffs Nuclear Power Station.

## **MASS CARE**

Objective 4, the ability to communicate with all appropriate locations, organizations and field personnel, was adequately demonstrated. Communications demonstrated were at the Church Creek Fire Station. A single line commercial telephone line was available with Fire Radio Net as backup. The communications at the planned site for reception and mass care, the South Dorchester High School, are adequate. School officials also have radios in their cars and all buses are radio equipped.

Objective 6, the ability to continuously monitor and control emergency worker exposure, was adequately demonstrated. Appropriate radiological exposure control kits and instructions, both verbal and written, were provided to each emergency worker.

Objective 21, the procedures, facilities, equipment and personnel for the registration, radiological monitoring and decontamination of evacuees was adequately demonstrated. The Shelter Manager and staff set up operations at the Church Creek Fire Station (alternate reception center), starting at 1258. Since the fire

station was used for decontamination, registration and mass care, the facility had been partially activated by the Assistant RDO after the Site Area Emergency was declared. Evacuees were radiologically monitored, found to be free of contamination and then registered on shelter occupancy forms. Red Cross personnel arrived at 1330. The Church Creek Fire Station is not appropriate for full-scale assembly area/reception center use. After the exercise, the South Dorchester High School was inspected. The available resources were more than adequate to meet the requirements of a reception center. Since the South Dorchester High School is the planned facility for this function, it is recommended that in future exercises this facility be used to demonstrate this objective.

Objective 22, the facilities, equipment and personnel for congregate care of evacuees was adequately demonstrated. The Mass Care Center used for exercise purposes was the Church Creek Fire Station. The fire station is not appropriate for full-scale mass care/evacuation center uses, especially if combined with emergency worker decontamination and evacuee reception. The planned Mass Care Center, the South Dorchester High School, has excellent resources for mass care purposes. All facilities are on one floor and can accommodate handicapped evacuees. Since the South Dorchester High School is the planned facility for Mass Care, it is recommended that during future exercises this facility be used to demonstrate this objective.

## C. ST. MARY'S COUNTY

### **ST. MARY'S COUNTY EMERGENCY OPERATIONS CENTER**

Objective 1, the ability to monitor, understand and use emergency classification levels, was adequately demonstrated. The St. Mary's County EMA (SMEMA) Director kept the EOC staff advised on the current classification status through various briefings, while EOC activation levels and respective procedural responses closely paralleled plan prescriptions.

Objective 2, the ability to fully alert, mobilize and activate personnel for both EOC and field locations, was adequately demonstrated. Although the County Communications Center staff were successful in completing notification contacts for the Alert and Site Area ECLs, some difficulty was observed on part of the dispatchers with regard to recording completed contacts with the numerous agency personnel involved in the call down.

Objective 3, the ability to direct, coordinate and control emergency activities, was adequately demonstrated. The SMEMA Director, under the command of the President of the County Board of Commissioners, effectively coordinated the County's response to exercise challenges. The Director conducted several briefings during the course of the exercise, and often consulted EOC staff members on key response actions.

All internal and inter-agency messages were recorded on pre-printed forms, reviewed by the SMEMA Director, and filed (resolving a previous inadequacy from the 1987 Calvert Cliffs REP exercise). Although message traffic was adequately controlled during the exercise, there remains room for improvement with regard to message record keeping. All recorded messages (internal, outgoing, and incoming) were stored in the same message box, causing inconvenience for retrieval and access (such as for briefing purposes and monitoring the status of response actions or requests). Furthermore, only one message copy was generated for each message, increasing the likelihood for record misplacement.

Objective 4, the ability to communicate with all appropriate locations, organizations and field personnel, was adequately demonstrated. No systems failed, with the exception of the County Civil Defense Radio Net (one of the two hard copy backup systems) which had been inoperable for several days due to the on-going installation of a new County 911 system. The inability to use this system did not inhibit County response.

Additional phones have been added to the EOC conference room in response to FEMA recommendations in a previous REP exercise (see CCX87-5I). Phone usage was slightly complicated by the fact that all incoming calls are automatically patched through the Communications Center. Modification to the system is planned (with the anticipated acquisition of the County CENTREX services for the EOC) to enable direct reception of calls by EOC staff members in the conference room.

Objective 5, facilities, equipment, displays and other materials, were adequate to support emergency operations.

Objective 6, the ability to continuously monitor and control emergency worker exposure, was adequately demonstrated. The County RDO demonstrated actual distribution of dosimetry to all participating field personnel (State Troopers and REACTS personnel serving as field monitors).

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. The SHEMA Director made positive efforts to assure that activation of sirens and the EBS would be coordinated with Calvert County (as evidenced by the 1030 hours phone contact with Calvert County, wherein the two EOC Directors agreed to wait until an escalation to General Emergency prior to siren activation).

St. Mary's County activated sirens and the EBS only once, at 1232 hours, well within 15 minutes of the 1229 agreement among the counties, accomplished via the dedicated hotline. The County was not notified of any other activation by Calvert County. Actual contact was made with WKIK (the lead EBS station for St. Mary's County) prior to the 1229 agreement and activation. EBS activation by St. Mary's County is greatly enhanced by its ability to directly broadcast an EBS message via a WKIK drop in the EOC.

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. The County PIO under the direction of the SHEMA Director, prepared and coordinated two EBS messages during the exercise. Prescribed EBS messages were used, including descriptions of protective action areas.



Objective 14, the ability to brief the media in an accurate, coordinated and timely manner, was adequately demonstrated. One media briefing was simulated during the exercise. At this briefing, the PIO, County Commissioner, and SHEMA Director presented the current conditions at the plant, the current ECL, and the protective actions taken. Excellent use of maps were made during the briefing, which included plume direction. However, as prescribed by the St. Mary's County Radiological Emergency SOP (Attachment 4, Section 3.4, July 1989), the County PIO failed to produce periodic news releases and simulate their distribution to the two local newspapers (and actually distribute them to the Calvert County news representative at the Joint Media Center, for exercise purposes).

Objective 15, the ability to establish and operate rumor control in a coordinated and timely fashion, was adequately demonstrated. Several "rumor control" calls were effectively handled by the County PIO and the SHEMA Director on a dedicated EOC rumor control phone line.

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. Questioning of the County Health Director indicated his thorough familiarity with plan prescriptions addressing the administration of KI. All participating field personnel were properly briefed and directed to await ingestion orders from the County EOC prior to any consumption of KI. Plume impact upon St. Mary's County, as provided for by the exercise scenario, did not warrant the administration of KI during the exercise. County KI supplies were well maintained and adequate in quantity.

## B. STATUS OF PREVIOUS INADEQUACIES

The following previous inadequacies were identified at the last joint, biennial Calvert Cliffs exercise, conducted November 17, 1987. Each item is followed by a discussion of findings, as demonstrated during the September 14, 1989 exercise, and a determination of present status.

### 1. DEFICIENCIES

There were no Deficiencies identified during the 1987 exercise.

### 2. AREAS REQUIRING CORRECTIVE ACTION

There were seventeen Areas Requiring Corrective Action identified in the 1987 exercise.

#### State EOC

##### 2.1 Problem CCX87-1R.

In keeping with current policy, State officials did not take an active role in directing or coordinating the activation of the siren system and EBS. It is a County responsibility to not only activate the alert and notification system, but to determine when such activations are appropriate. Because the process as currently stated in the plan is not clearly defined, Dorchester County officials did not activate the alert and notification system.

A formal process needs to be developed and included in the plans to insure a coordinated activation of the system. It is recommended that State officials consider taking a more active role in coordinating the alert and notification system activation.

**FINDING:** Twice during the exercise, Plume Zone Counties (Dorchester at 1030 and Calvert at 1140) sounded their sirens and activated their EBS independently, without proper coordination with the other Counties. The three Plume Zone Counties did simultaneously sound their sirens at 1230. Thus there was not a coordinated and simultaneous activation of the sirens throughout the EPZ on a regular basis. This was due primarily to the lack of a specific, written coordination procedure.

All Counties need a clearer procedure for coordinating with each other for Alert and Notification actions. FEMA recommends that County officials develop a mutually acceptable procedure for the coordinated activation of the public Alert and Notification system, to be included in their plans and procedures. It is recommended that the process: 1) specify events (such as the determination of protective actions) that would cause the system to be activated; 2) provide for the simultaneous activation of the A&N system throughout the EPZ whenever possible or practical; 3) specify an appropriate means of communication that will provide for conferencing, and is not likely to be in use for other purposes; 4) provide hardcopy of the recommendations to assist in decision-making; and 5) include a roll call with proper identification of who and with what authority is speaking. FEMA had previously urged the State to take the lead role in establishing and coordinating an A & N system activation procedure, but it is recognized that this may not be feasible.

STATUS: Not resolved.

### Accident Assessment

#### 2.2 Problem CCX87-2R.

A correction on the EOF status board was not noticed promptly by the dose assessment personnel. It is recommended that EOF postings be consulted more frequently.

FINDING: The State EOF staff consulted the status boards frequently.

STATUS: Resolved.

### Air Sampling Team

#### 2.3 Problem CCX87-3R.

State Field Team procedures should be reviewed and changed so that proper monitoring techniques are followed by team members. Members should also receive additional training in monitoring techniques in Radiological Exposure Control.

FINDING: The written procedures had not been revised to incorporate the specific recommendations identified in the report for the previous exercise.

STATUS: Not resolved.

#### 2.4 Problem CCX87-4P.

The monitoring team members should demonstrate proper exposure control practices to include the use of gloves and minimizing ventilation of the vehicle during travel through and in the plume pathway.

FINDING: The teams demonstrated radiological exposure control via using gloves and minimizing ventilation of the vehicle while traveling through the plume.

STATUS: Resolved.

#### 2.5 Problem CCX87-5R.

The maps of monitoring locations should be improved and team members should be provided more detailed geographic information on these locations.

FINDING: One team (Western Shore) experienced problems locating the assigned monitoring points, due to outdated and insufficiently detailed maps.

STATUS: Not Resolved.

#### Red Cross Field Headquarters

#### 2.6 Problem CCX87-6R.

The Red Cross does not provide clothing during a Nuclear Emergency. County officials will have to find other means of obtaining clothing to be used by evacuees in the event that evacuees is contaminated. Plans should be changed accordingly.

FINDING: According to the Emergency Operations Plans of the three Plume Zone Counties, Annex E, Shelter and Mass Care, the American Red Cross supplies clothing from "other volunteer agencies and made available through mutual cooperation with these agencies." With this understanding, it is apparent that ARC is part of the coordination and distribution system, and not the generator of the clothing supplies.

STATUS: Resolved.

Calvert County EOC

2.7 Problem CCX87-7R.

County officials did not activate the sirens to notify the residents to take protective actions at 1059 (sheltering). Although route alerting was demonstrated, it was not completed for over an hour. The primary system of alerting and notifying the public was not utilized. Resolution of the issues identified in Area Requiring Corrective Action Number 1 (CCX87-1R) will address this problem.

FINDING: Calvert County successfully demonstrated primary Alert & Notification in the 1989 exercise. They activated the EBS two times (1140 and 1233 hours).

STATUS: Resolved.

Calvert County Emergency Worker Decontamination Station

2.8 Problem CCX87-8R.

The Emergency Worker Decontamination Station was co-located with the assembly center for the General Public. It is recommended that a separate facility be designated with equipment necessary to perform monitoring and decontamination functions.

FINDING: The Calvert County Assembly Areas are at Calvert High School and Solomons Volunteer Fire Department; the Emergency Worker Decontamination Stations are at Prince Frederick Volunteer Fire Department, Company 2, and the Esperanza Middle School, per Appendix Q-1.

STATUS: Resolved.

Calvert County Reception and Mass Care

2.9 Problem CCX87-9R.

The overall direction and control in Reception and Mass Care Field Operations lacked a coordinated effort. Additional planning and training is needed.

FINDING: The Calvert County Department of Social Services, the key agency for Reception and Mass Care (Calvert County SOP, Attachment #12), performed adequately.

STATUS: Resolved.

Dorchester County EOC

2.10 Problem CCX87-10R.

Because the process as currently stated in the plan is not clearly defined, Dorchester County officials did not activate the alert and notification system. Resolution of the issues identified in Area Requiring Corrective Action Number 1 will address this problem.

FINDING: Dorchester County followed the Alert & Notification process per the plans and procedures applicable for the 1989 exercise. The County sounded sirens twice during the exercise, once (alone) at Site Area Emergency (to provide information to the public), and again at General Emergency (with the other two risk Counties) with protective actions.

STATUS: Resolved.

St. Mary's County EOC

2.11 Problem CCX87-11R.

Staff members were briefed on the plant emergency in detail as the initial notification calls were made by the dispatcher. There are normally 14 to 20 calls to be made and as each staff member was given extensive briefings, it became a time consuming process to notify the responders. Much less detailed information, as well as having more staff members available to place notification calls, would expedite this process.

FINDING: Call down procedures have been modified. Notification calls are now conducted by Communications Center staff utilizing a pre-printed call list and message form. Notification messages during the exercise were brief, accurate, complete, and timely.

STATUS: Resolved.

2.12 Problem CCX87-12R.

Internal message procedures regarding what information was to be recorded as well as the distribution procedures were not clearly defined. The staff recognizes this problem and discussed it at some length during the exercise. A resolution still needs to be made.

FINDING: EOC staff members conscientiously recorded messages (internal and inter-agency) on message forms; all messages were reviewed by the SMEMA Director and filed. There is still room for improvement, however, with message record keeping and control. (See Objective #3 under the St. Mary's County EOC report.)

STATUS: Resolved.

#### 2.13 Problem CCX87-13R.

The EOC staff was not adequately tasked during this exercise. The scenario did not provide enough events that involved the St. Mary's County participants. This could have a marked adverse affect during the next exercise with respect to the staff members wondering if their involvement is really worth their time and effort. Future exercise scenarios should allow for more testing of this staff's capability to respond to emergencies. The staff was professionally equipped and able to respond and yet not tested.

FINDING: Although the exercise scenario did not cause the conduct of a simulated evacuation in St. Mary's County sectors, the EOC staff prepared for more extensive protective actions by staging responders (including the actual dispatching of monitoring teams and the precautionary establishment of a mass care center), conducting actual agency contacts, and adequately discussing potential response measures.

STATUS: Resolved.

#### 2.14 Problem CCX87-14R.

St. Mary's County did not coordinate their siren and EBS activations with Calvert County. It is important that activation of the Alert and Notification System be coordinated with other risk jurisdictions; not only to insure that established time frames are met, but also to eliminate any possible confusion that might result in neighboring counties. Resolution of the issues identified in Area Requiring Corrective Action Number 1 will address this problem.

FINDING: Even though protective actions and the decision to sound sirens and activate the EBS did not originate in St. Mary's County during the exercise, the SMEMA Director took conscious steps to assure that these activities would be coordinated between Calvert and St. Mary's County. For example, at 10:30 am the SMEMA Director contacted his counterpart in

Calvert County, and obtained an agreement to wait until the declaration of General Emergency before sounding the sirens. These efforts indicate that the St. Mary's County EOC can not be held accountable for any lack of coordination between the counties with regard to siren sounding and EBS activation during the exercise.

STATUS: Resolved.

#### St. Mary's County Reception and Mass Care

##### 2.15 Problem CCX87-15R.

Monitoring and decontamination team members were not aware of the proper handling procedures for contaminated clothing. The proper method for disposal and/or decontamination of contaminated clothing should be conveyed to monitoring/decontamination teams.

FINDING: This previous inadequacy was not addressed during the exercise because the exercise scenario did not support the demonstration of Reception and Mass Care Centers in St. Mary's County.

STATUS: Deferred until the 1991 Calvert Cliffs REP exercise.

##### 2.16 Problem CCX87-16R.

The responsibility for the provision of immediate replacement clothing should be clearly identified.

FINDING: This previous inadequacy was not addressed during the exercise as the exercise scenario did not support the demonstration of Reception and Mass Care Centers in St. Mary's County.

STATUS: Deferred until the 1991 Calvert Cliffs REP exercise.

#### St. Mary's County Field Monitoring Team

##### 2.17 Problem CCX87-17R.

Several areas, including monitoring point #15, were dead radio areas. These were areas generally close to the Patuxent River in low underlying locations behind ridge lines or small hills. Perhaps the addition of a linear amplifier to each units' CB radio could be installed to boost power to punch through to the County EOC.



FINDING: No apparent communications breakdowns or difficulties between the EOC and two participating field monitoring teams (comprising four REACTS operators) were observed during the exercise. (Recorded EOC messages indicate that the field monitoring teams travelled extensively throughout the County's Plume EPZ sectors.)

STATUS: Resolved.

## V. SUMMARY LIST OF ISSUES

### A. EXPLANATION OF CATEGORIES.

FEMA has classified the problems listed for each evaluated location or activity according to the following three categories:

1. Deficiencies are demonstrated and observed inadequacies that cause a finding that offsite emergency preparedness is 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 a nuclear power facility in the event of a radiological emergency. Because of the potential effect of deficiencies on emergency preparedness, they are to be promptly corrected through appropriate remedial actions, including remedial exercises, drills, or other actions. There were no Deficiencies at this exercise.

2. Areas Requiring Corrective Actions are demonstrated and observed inadequacies of State and local government performance. Although their correction is required before the next scheduled biennial exercise, they are not considered, in and of themselves, to adversely affect public health and safety.

3. Areas Recommended for Improvement are problem areas observed during an exercise that are not considered to adversely affect public health and safety. Correction of these, although not required, would enhance an organization's level of emergency preparedness.

### B. FINDINGS.

The following list of findings is organized based on the three basic categories: Deficiencies, Areas Requiring Corrective Action, and Areas Recommended for Improvement. All listings show: 1) an identification number; 2) the location or activity where the problem was identified; 3) correlation with NUREG 0654/FEMA REP. 1, Rev. 1 planning standards and evaluation criteria; 4) a date proposed by the State to correct the problem; and 5) a confirmed correction date. The problem is discussed and suggestions are made for its solution. Space is left for State and Local response to the identified problem.

AREA REQUIRING CORRECTIVE ACTION

---

Problem ID	Location/Activity	NUREG Element	Proposed Correction Date	Confirmed Correction Date
CCX89-1R	State EOC	G.3.c.	1991 exercise	

---

**FEMA Finding:**

The rumor control staff, physically separated from both Operations and the PIO by a long hall, did not receive status updates and other information in a timely manner. Specifically, receipt of the Site Area Emergency declaration by rumor control occurred more than an hour after the EOC was notified, and the General Emergency notification was delayed about 30 minutes. The Public Address system had reportedly been turned off, and information was transferred from the PIO by messenger. See Annex Q, Section 3.1.6. (Objective 15).

**Recommendation:**

The timely transfer of status changes and other important information to the rumor control staff should be assured through the use of either the Public Address system, a work station or monitor connected to the computerized information system, or the designation of express messengers.

**Response:**

This finding resulted from a late change in location of the Public Information staff. In short time we were unable to relocate the rumor control phone lines, forcing the rumor control staff to remain in the old location out of the normal flow of information. In the future, the rumor control staff will be informed in a timely manner through close proximity to the operations room, the Public Address system and eventually the computerized Emergency Information System.

### AREA REQUIRING CORRECTIVE ACTION

---

Problem ID	Location/Activity	NUREG Element	Proposed Correction Date	Confirmed Correction Date
CCX89-2R	Field Monitoring Teams	I.8	1991 exercise	

---

#### FEMA Finding:

Although both teams demonstrated monitoring procedures in accordance with the written plans and procedures (Maryland Department of the Environment [MDE], Center for Radiological Health, SOP), the procedures had not been revised to incorporate changes needed to comply with FEMA-REP-2, Rev. 1, as identified in the report for the 1987 biennial exercise. (Objective 7).

#### Recommendations:

- a) Only closed probe readings were taken. Both open and closed probe readings should be taken, at a height of 1 meter.
- b) Beta-gamma and gamma-only readings were taken at a height of two meters only. Measurements should also be taken at 1 meter and 7.5 centimeters.
- c) The probe on the survey and analyzing instruments were not enclosed in thin plastic. The probes should be enclosed in plastic to minimize the possibility of contamination.
- d) Air samples should be taken even when the ambient level is less than 5 millirem per hour, if iodine deposition is suspected. The procedures currently state that air samples may be asked for at such ambient levels.
- e) The current procedure calls for measuring the air samples in an area of lower ambient radiation if the ambient level is above 5 millirem per hour. It is recommended that measurement of air samples always be performed in an area of background ambient radiation.
- f) The current procedure calls for the air sampling time not to exceed 5 minutes, without regard to the flow rate or volume of air passing through the sample media. The procedure should be modified to stipulate that a minimum of 10 cubic feet be drawn through the sample media.
- g) The teams did not demonstrate purging the air sample media with air (or nitrogen) in a low-background area. The procedures should specify that such purging be performed.

#### Response:

The MDE procedures will be reviewed and compared to the FEMA REP-2 guidance. Necessary changes will be made.

AREA REQUIRING CORRECTIVE ACTION

---

Problem ID	Location/Activity	NUREG Element	Proposed Correction Date	Confirmed Correction Date
CCX89-3R	Field Monitoring Team (W. Shore)	K.3.b.	1990 training	

---

**FEMA Finding:**

The members of one Field Monitoring team (Western Shore) did not demonstrate sufficient familiarity with radiological exposure control procedures: they did not demonstrate periodic (every 30 minutes) reading of their dosimeters, and they were not knowledgeable of the procedures (MDE, Center for Radiological Health, SOP 4.0, Attachment 2) concerning actions if exposures of 12 rem are anticipated or approached. (Objective 6).

**Recommendation:**

Field Team members should receive additional training in radiological exposure control procedures. It is recommended that the Field Team Coordinator (at the EOF) remind the team members in the field to read their dosimeters every 30 minutes.

**Response:**

Exposure control techniques and procedures will be stressed during the next annual training session(s).

AREA REQUIRING CORRECTIVE ACTION

---

Problem ID	Location/Activity	NUREG Element	Proposed Correction Date	Confirmed Correction Date
CCX89-4R	Field Monitoring Team (W. Shore)	I.8. I.9.	1991 exercise	

---

**FEMA Finding:**

One team (Western Shore) did not have radioactive check sources to determine the proper operation of the survey instruments, and to set up the dual channel analyzer, as required by equipment manufacturer's instructions. (Objective 7).

**Recommendation:**

The field teams should be provided with radioactive sources such as Cesium-137 for the survey instruments, and Barium-133 for use in setting up the dual channel analyzer at the optimum level for detection of radioiodines.

**Response:**

This finding will be evaluated and appropriate check sources will be procured as deemed necessary.

AREA REQUIRING CORRECTIVE ACTION

---

Problem ID	Location/Activity	NUREG Element	Proposed Correction Date	Confirmed Correction Date
CCX89-5R	Field Monitoring Team (W. Shore)	I.9.	1991 exercise	

---

**FEMA Finding:**

The silver zeolite cartridges supplied to one team (Western Shore) had not been enclosed in an air tight plastic bag, as specified by the manufacturer (the bag had been opened previously). This does not comply with Annex Q, Section 6.7, Equipment Maintenance. (Objective 8).

**Recommendation:**

Unused cartridges should be stored in an airtight bag or container; the manufacturer should be consulted to determine whether the cartridges available for the exercise should be discarded and replaced.

**Response:**

The above recommendation will be implemented.

AREA REQUIRING CORRECTIVE ACTION

---

Problem ID	Location/Activity	NUREG Element	Proposed Correction Date	Confirmed Correction Date
CCX89-6R	Field Monitoring Team (W. Shore)	I.9.	1991 exercise	

---

**FEMA Finding:**

One Field Monitoring team (Western Shore) did not have equipment indicating recent calibration, as required by Annex Q, Section 6.7. The air sample pump bore a sticker indicating 9/23/81 as the last calibration date, and the SAM-2 analyzer did not have a sticker. See MDE, Center for Radiological Health, SOP, Appendix C, Attachment 6. (Objective 8).

**Recommendation:**

The air sample pump and radiation detection instruments should be calibrated annually, in accordance with FEMA-REP-2, Rev. 1. Radiological instruments should have a record of current calibration available for review in the field.

**Response:**

Calibration records are available at MDE headquarters and field monitoring teams can check calibration during mobilization. This practice will be reviewed against FEMA-REP-2 guidance and action will be taken accordingly.



AREA REQUIRING CORRECTIVE ACTION

---

Problem ID	Location/Activity	NUREG Element	Proposed Correction Date	Confirmed Correction Date
CCX89-7R	Field Monitoring Team (W.Shore)	I.8.	1990 training	

---

**FEMA Finding:**

One Field Monitoring team (Western Shore) experienced difficulty in finding the field monitoring points, due to maps with outdated information and insufficient detail. The team members could not locate points 32 and 33, and had difficulty finding points 3 and 19. See MDE, Center for Radiological Health, SOP, Appendix C, Attachment 6. (Objective 7).

**Recommendation:**

The maps should be updated, and should provide sufficient detail to locate the monitoring points.

**Response:**

Existing maps will be reviewed. Teams will be given the best available maps and site familiarization training will be conducted.

AREA REQUIRING CORRECTIVE ACTION

---

Problem ID	Location/Activity	NUREG Element	Proposed Correction Date	Confirmed Correction Date
CCX89-8R	Joint Media Center	G.4.a.	1990 training	

---

**FEMA Finding:**

Several state news releases contained inappropriate and/or insufficient information: Release #4 referred to the "Plume zone" when, in fact, no release had occurred; Release #7 identified protective action areas in terms of zones and sectors, rather than in landmarks or boundaries familiar to the public. News releases are required to include proper identification of the geographic areas affected by the emergency (Annex Q, Section 3.1.6). (Objective 14).

**Recommendation:**

It is recommended that the term "Ten Mile Emergency Planning Zone" be substituted for "Plume zone"; protective action areas should be described in terms familiar to the public, such as political boundaries, roads, streams and rivers, and other landmarks.

**Response:**

Public information staff training will emphasize the need to use terms familiar to the public. The Maryland Emergency Management Agency's new public affairs officer will be better prepared to oversee the public information formulation in the future.

AREA REQUIRING CORRECTIVE ACTION

---

Problem ID	Location/Activity	NUREG Element	Proposed Correction Date	Confirmed Correction Date
CCX89-9R	County EOCs	E.5. E.6.	1991 exercise	

---

**FEMA Finding:**

Twice during the exercise, Plume Zone Counties (Dorchester at 1030 and Calvert at 1140) sounded their sirens and activated their EBS independently, without proper coordination with the other Counties. The three Plume Zone Counties did simultaneously sound their sirens at 1230. Thus there was not a coordinated and simultaneous activation of the sirens throughout the EPZ on a regular basis. This was due primarily to the lack of a specific, written coordination procedure. (Objective 12).

**Recommendation:**

All Counties need a clearer procedure for coordinating with each other for Alert and Notification actions. FEMA recommends that County officials develop a mutually acceptable procedure for the coordinated activation of the public Alert and Notification system, to be included in their plans and procedures. It is recommended that the process: 1) specify events (such as the determination of protective actions) that would cause the system to be activated; 2) provide for the simultaneous activation of the A&N system throughout the EPZ whenever possible or practical; 3) specify an appropriate means of communication that will provide for conferencing, and is not likely to be in use for other purposes; 4) provide hardcopy of the recommendations to assist in decision-making; and 5) include a roll call with proper identification of who and with what authority is speaking. FEMA had previously urged the State to take the lead role in establishing and coordinating an A & N system activation procedure, but it is recognized that this may not be feasible.

**Response:**

Maryland Emergency Management Agency will address this issue in consultation with the three plume zone counties to arrive at a mutually agreed upon plan to assure the coordinated and simultaneous activation of sirens.

AREA REQUIRING CORRECTIVE ACTION

---

Problem ID	Location/Activity	NUREG Element	Proposed Correction Date	Confirmed Correction Date
CCX89-10R	Calvert County Traffic/Access Control	K.3.a.	1991 exercise	

---

**FEMA Finding:**

Maryland State Police (MSP) Officers had the following two types of self-reading dosimetry at their duty stations: 0-20 R, and 0-200 R. The required dosimetry, per Annex Q, Attachment 9-2, is "at least two self-reading dosimeters per emergency worker (one low range, 0-200 mR; and one mid-range, 0-20R)." The MSP command person is responsible for issuing the dosimeters and TLDs (Calvert County SOP, Attachment #14, p.14-3). (Objective 6).

**Recommendation:**

Ensure that the State Police Troopers are issued the proper dosimetry before they begin their field duty.

**Response:**

This has not been a problem in the past. Apparently, a wrong box of self-reading dosimeters was issued. This will be reviewed and corrected immediately.

AREA REQUIRING CORRECTIVE ACTION

---

Problem ID	Location/Activity	NUREG Element	Proposed Correction Date	Confirmed Correction Date
CCX89-11R	Calvert County Schools	K.3.a.	1991 exercise	

---

**FEMA Finding:**

The school bus drivers had available the following self-reading dosimetry at their duty stations: twenty CDV 138 dosimeters, 0-200 mR. The required dosimetry (Annex Q, Attachment 9-2) is "at least two self-reading dosimeters per emergency worker (one low range, 0-200 mR; and one mid-range, 0-20R)." (Objective 6).

**Recommendation:**

Ensure that the School bus drivers be issued the proper dosimetry, including the two specified types of self-reading dosimeters, before they begin their field duty.

**Response:**

Calvert County will review this with the County Radiological Officer and School Transportation Supervisor.

At the time of the exercise we did not have a sufficient number of 0-20R MID-RANGE Dosimeters for all emergency workers. MEMA provided county with sixty-five when the guidance was changed. Calvert County has received fifty more mid-range dosimeters. The county will purchase fifty more by year end.

AREA REQUIRING CORRECTIVE ACTION

---

Problem ID	Location/Activity	NUREG Element	Proposed Correction Date	Confirmed Correction Date
CCX89-12R	Calvert County Schools	K.3.a.	1990 training	

---

**FEMA Finding:**

The 0-200 mR dosimeters issued to the school bus drivers by the Assistant Transportation Officer were not zeroed (the hair line was off scale). The Assistant Transportation Officer and bus drivers were not familiar with using the charger and zeroing the dosimeters. Emergency Workers require the proper radiological instruments, per Annex Q, Attachment 9-2. (Objective 6).

**Recommendation:**

Training for the bus drivers and Assistant Transportation Officer should include hands-on practice of using a charger and zeroing dosimeters. Consideration should be made to zeroing the dosimeters at the County EOC to facilitate distribution in the field.

**Response:**

Training requirements have been discussed with Calvert County's Assistant Superintendent of Schools and Transportation Director. This as well as other Emergency Operations information will be part of the bus drivers scheduled training.

AREA REQUIRING CORRECTIVE ACTION

---

Problem ID	Location/Activity	NUREG Element	Proposed Correction Date	Confirmed Correction Date
CCX89-13R	Calvert County Mass Care	J.10.h.	1991 exercise	

---

**FEMA Finding:**

The Methodist Church was used in this exercise for demonstrating mass care in Calvert County. However, the church has no feeding or bathing facilities, so this is unsatisfactory as a mass care center. This facility is not listed in the plan, either as an Assembly Area or as an Evacuation Center, per Appendix Q-1, Attachments 3.6-4 and 3.6-5. (Objective 22).

**Recommendation:**

Demonstrate mass care capabilities by using plan-stipulated facilities.

**Response:**

This was listed as a change prior to the exercise, so as not to disrupt schools any more than necessary. We have set up mass care centers in the schools in previous exercises and are familiar with areas to be used. The church does have kitchen facilities and a church group to prepare and serve meals. Also there are two rest rooms with toilets, sinks and hot and cold water. There are no showers.

AREA REQUIRING CORRECTIVE ACTION

---

Problem ID	Location/Activity	NUREG Element	Proposed Correction Date	Confirmed Correction Date
CCX89-14R	Dorchester County EOC	H.3	1989	

---

**FEMA Finding:**

Status boards were not used effectively to keep staff members up-to-date on actions being taken. The only information placed on the status boards were the Emergency Classification Levels. The Dorchester County Emergency Operations Plan (Annex A [Direction and Control], EOC SOP, Communications Procedures, para 3 and 4; EOC SOP, Display Procedures) requires that status boards contain "major emergency information, problems, and actions taken." (Objective 5).

**Recommendation:**

Information posted on the status boards should not be limited to emergency classification levels. Other information is required to be posted. This information includes: EOC staffing completion, activation of any field activities (Reception/Mass Care Centers, Emergency Worker Decontamination Stations, Traffic and Access Control Points), siren and EBS activation, all protective action decisions, route alerting, evacuation completion times, etc., per Dorchester County EOP.

**Response:**

The individual maintaining the Status Board in the EOC for the Exercise had to leave at noon. The Director neglected to assign someone else to this position. New written instructions have been developed for future EOC activation involving Calvert Cliffs.



AREA REQUIRING CORRECTIVE ACTION

---

Problem ID	Location/Activity	NUREG Element	Proposed Correction Date	Confirmed Correction Date
CCX89-15R	Dorchester County Emergency Worker Decontamination	H.10	1991 exercise	

---

**FEMA Finding:**

CDV-700 survey meters were provided for monitoring of personnel and equipment; however, there were no calibration stickers or other calibration evidence with the instruments. Stickers or some other record of calibration is required under the provisions of Planning Standard H, NUREG-0654/FEMA-REP-1, Rev 1. (Objectives 6 and 25).

**Recommendation:**

Radiological instruments should have a record of current calibration available for review in the field. When CDV-700 survey meters are replaced every six months, documentation of calibration is needed.

**Response:**

The CDV-700 instruments in question were from the radiological kits calibrated by the State Radiological Maintenance Shop. The carton that the instruments came from had a calibration date on it but no stickers on any of the instruments. We will evaluate use of stickers on individual instruments.

AREA REQUIRING CORRECTIVE ACTION

---

Problem ID	Location/Activity	NUREG Element	Proposed Correction Date	Confirmed Correction Date
CCX89-16R	Dorchester County Reception/Mass Care	J.10.h. J.12	1991 exercise	

---

**FEMA Finding:**

Reception/Mass Care functions were demonstrated at an inadequate facility, the Church Creek Fire Station. The fire station is not planned for these uses. Reception/Mass Care functions should be conducted at the South Dorchester High School, as listed in the plan (Appendix Q-1, Attachments 4.6-4 and 4.6-5; Dorchester County SOP, Attachment #11, Department of Social Services SOP, Section 5.1.1, Tab E.). This facility was not used during the exercise because school was in session. (Objectives 21 and 22).

**Recommendation:**

Demonstrate Reception/Mass Care functions at the facility listed in the plan.

**Response:**

Cambridge-South Dorchester High School is the designated reception/mass care center and will be utilized in future exercises of the plan.

AREA REQUIRING CORRECTIVE ACTION

---

Problem ID	Location/Activity	NUREG Element	Proposed Correction Date	Confirmed Correction Date
CCX89-17R	St. Mary's County EOC	G.3.a	1991 exercise	

---

**FEMA Finding:**

The County PIO produced no news releases and did not simulate their distribution to the two local newspapers (and actually distribute them to the Calvert County news representative at the Media Center, for exercise purposes), as prescribed by the St. Mary's County Radiological Emergency SOP (Attachment 4, Section 3.4, July 1989). (Objective 14).

**Recommendation:**

In future exercises, such press releases should be prepared as per plan prescriptions.

**Response:**

Above recommendation will be implemented.

AREA RECOMMENDED FOR IMPROVEMENT

---

Problem ID	Location/Activity	NUREG Element	Proposed Improvement Date	Confirmed Improvement Date
CCX89-1I	State EOC	A.3		

---

FEMA Finding:

Long, complex protective action messages from the State (MDE Acting Secretary) to the Counties caused difficulties in communication. These messages were transmitted verbally by conference call on the dedicated telephone line. The Plume Zone Counties requested clarification and repetition of the MDE Protective Action decisions. MEMA is assigned the Overall Coordinating Agency role (Annex Q, Section 1.2, Table 5-2), especially for Protective Actions, so can assist in resolving this difficulty. (Objective 3).

Recommendation: Procedures should be revised to incorporate hard copy communications at important decision times. MEMA, as the Overall Coordinating Agency, should ensure that hard copy, telefax Protective Action recommendations and directives be transmitted to the Plume Zone County EOCs during the decision-making process. This action would help ensure that the State and Plume Zone Counties can function smoothly and in concert on Protective Actions.

Response:

AREA RECOMMENDED FOR IMPROVEMENT

---

Problem ID	Location/Activity	NUREG Element	Proposed Improvement Date	Confirmed Improvement Date
CCX89-2I	State and County EOCs	A.3.		

---

**FEMA Finding:**

Coordination between State and County levels, and amongst the Plume Zone Counties, was hampered during the first Protective Action, because the dedicated telephone line was being used for other purposes. After the MDE Acting Secretary's initial protective action decision, the utility continued to use the dedicated notification line (red phone) to discuss on-site evacuation. This usage interfered with the counties ability to use the link to coordinate their siren/EBS activation. (Objective 12).

**Recommendation:**

Ensure a means of conferencing that the State and Counties can use exclusively. MEMA, as the Overall Coordinating Agency (Annex Q, Section 1.2, Table 5-2), should devise a system to ensure improved coordination between State and County agencies.

**Response:**

AREA RECOMMENDED FOR IMPROVEMENT

---

Problem ID	Location/Activity	NUREG Element	Proposed Improvement Date	Confirmed Improvement Date
CCX89-3I	State and County EOCs	A.3.		

---

**FEMA Finding:**

The roll call method for indicating usage of the emergency communications system (the dedicated telephone line) during conference calls was incomplete. The method consisted of calling out the various jurisdictions, who would answer solely by jurisdiction name or by "here" or "present". No other self-identification was used. It was sometimes unclear who was speaking. (Objective 3).

**Recommendation:**

The various jurisdictions/agencies should identify themselves by name and position during roll call, and as appropriate during the conference. This would ensure that there is no question who, and for what jurisdiction or authority, is speaking.

**Response:**

AREA RECOMMENDED FOR IMPROVEMENT

---

Problem ID	Location/Activity	NUREG Element	Proposed Improvement Date	Confirmed Improvement Date
CCX89-4I	Field Monitoring Teams	K.3.a.		

---

FEMA Finding:

Although respirators were not required to be worn (as stated in MDE, Center for Radiological Health, SOP 4.0), they were available to the Field Team members. However, the team members had not been fit tested and had never been trained in the use of respirators. (Objective 6).

Recommendation:

Field Team members should be fit tested and trained in the use of respirators.

Response:

AREA RECOMMENDED FOR IMPROVEMENT

---

Problem ID	Location/Activity	NUREG Element	Proposed Improvement Date	Confirmed Improvement Date
CCX89-5I	Field Monitoring Teams	I.9.		

---

**FEMA Finding:**

The Field Monitoring teams did not have equipment and supplies for removing the particulate filter from its holder, and for decontaminating the combination holder on the air sample pump, per FEMA-REP-2, Rev. 1 (Objective 8).

**Recommendation:**

The teams should be provided with tweezers for removal of the particulate filter from its holder, and should be provided with supplies such as "Radiac Wash" towelettes for use in decontaminating the filter holder.

**Response:**



AREA RECOMMENDED FOR IMPROVEMENT

---

Problem ID	Location/Activity	NUREG Element	Proposed Improvement Date	Confirmed Improvement Date
CCX89-6I	Field Monitoring Team (W. Shore)	I.9.		

---

**FEMA Finding:**

One Field Monitoring team did not use fixed geometry when counting the air sample, as recommended by FEMA-REP-2, Rev.1, Appendix D. (Objective 8).

**Recommendation:**

Field teams should be provided with a device (such as a plancet-type holder) that will ensure that a reproducible geometry is used when counting both the air and particulate samples.

**Response:**

AREA RECOMMENDED FOR IMPROVEMENT

---

Problem ID	Location/Activity	NUREG Element	Proposed Improvement Date	Confirmed Improvement Date
CCX89-7I	Calvert County Traffic/Access Control	K.3.		

---

**FEMA Finding:**

The Maryland State Police (MSP) Officers who were assigned to Traffic Control Points/Access Control Points were unaware of several actions which they could take to minimize exposure to radiological contamination. These included: 1) a requirement that MSP personnel assigned to TCPs/ACPs wear protective clothing, such as rain gear; and 2) instructions that would encourage assigned officers to take shelter in their closed vehicles whenever their traffic control responsibilities do not require them to be physically on the road. These measures would be in accord with Annex Q, Attachment 9-2. (Objective 6).

**Recommendation:**

The Maryland State Police should consider amending their Radiological SOP to include these self-protective procedures: 1) wear protective clothing while on TCP/ACP duty; and 2) take shelter in their closed vehicles whenever possible.

**Response:**

AREA RECOMMENDED FOR IMPROVEMENT

---

Problem ID	Location/Activity	NUREG Element	Proposed Improvement Date	Confirmed Improvement Date
CCX89-8I	Calvert County Emergency Worker Decontamination	K.5.a.		

---

**FEMA Finding:**

The call-in values were listed in the Plan (1 rem) and on the Calvert County EOC Status Board but were not listed in the Emergency Worker reference packet. This information should be provided to emergency workers prior to departure on a mission, per Annex Q, Attachment 9-2. (Objective 6).

**Recommendation:**

These call-in values should be listed in the reference packet issued to Emergency Workers.

**Response:**

AREA RECOMMENDED FOR IMPROVEMENT

---

Problem ID	Location/Activity	NUREG Element	Proposed Improvement Date	Confirmed Improvement Date
CCX89-9I	Calvert County Emergency Worker Decontamination	K.3.		

---

**FEMA Finding:**

The Maryland State Police officer had only two of the six pages of the reference packet issued at Calvert County to emergency workers. Full information is required for distribution to emergency workers prior to departure on a mission, per Annex Q, Attachment 9-2. (Objective 6).

**Recommendation:**

The State Police Barracks Radiological Officer should issue all six pages of the reference packet to State Police Officers designated as Emergency Workers.

**Response:**

S

AREA RECOMMENDED FOR IMPROVEMENT

---

Problem ID	Location/Activity	NUREG Element	Proposed Improvement Date	Confirmed Improvement Date
CCX89-10I	Calvert County Emergency Worker Decontamination	K.5.b.		

---

**FEMA Finding:**

The Emergency Worker Decontamination Station had plastic sheeting on the floor for contaminated Emergency Workers to walk on. Nothing was on the floor near the shower to be changed when the contaminated individual stepped into the shower and then stepped out. Contamination prevention measures are in accordance with Planning Standard K of NUREG 0654/FEMA-REP-1, Rev. 1. (Objective 25).

**Recommendation:**

Protective covering could be placed on the floor near the shower stalls. The covering should be easily replaceable.

**Response:**

AREA RECOMMENDED FOR IMPROVEMENT

---

Problem ID	Location/Activity	NUREG Element	Proposed Improvement Date	Confirmed Improvement Date
CCX89-11I	Calvert County Schools	K.3.		

---

**FEMA Finding:**

The Southern Middle School principal, who had been at the school for two years, was not aware of any training/orientation for the school teachers regarding their role in a radiological emergency evacuation. (Objective 19).

**Recommendation:**

It is recommended that the EPZ school teachers be provided with an orientation, during in-service training, to their role in a radiological emergency.

**Response:**

AREA RECOMMENDED FOR IMPROVEMENT

---

Problem ID	Location/Activity	NUREG Element	Proposed Improvement Date	Confirmed Improvement Date
CCX89-12I	Dorchester County EOC	A.1.d.		

---

**FEMA Finding:**

The Civil Defense Director was appointed in August, 1989. Neither the Dorchester County Emergency Operations Plan nor the Dorchester County Standard Operating Procedures have been updated to reflect the change in the Civil Defense Director. Updates are required by the provisions of the Dorchester County Emergency Operations Plan, Basic Plan, Section IV.C.2.a.; Annex A, Sections A.IV.B.1.d and A.VI.; and the Dorchester County SOP, Attachment 2, pages 2-10, 2-14. (Objective 3).

**Recommendation:** Plans and procedures should be updated as soon as possible to reflect the appointment of the new Civil Defense Director.

**Response:**

AREA RECOMMENDED FOR IMPROVEMENT

---

Problem ID	Location/Activity	NUREG Element	Proposed Improvement Date	Confirmed Improvement Date
CCX89-13I	Dorchester County EOC	G.1. G.4.a.		

---

**FEMA Finding:**

During the Press Briefing conducted by the PIO and County Commissioners, no press kits were available. (Objective 14).

**Recommendation:** Although all press releases were available to provide copies to the media, it would be beneficial to have press kits which contain standard information such as rumor control numbers, brochures from the utility and the public information packages that are provided to the residents annually which describe what they should do in an emergency.

**Response:**



AREA RECOMMENDED FOR IMPROVEMENT

---

Problem ID	Location/Activity	NUREG Element	Proposed Improvement Date	Confirmed Improvement Date
CCX89-14I	St. Mary's County EOC	E.2.		

---

**FEMA Finding:**

Although the County Communications Center staff were successful in completing notification contacts for the Alert and Site Area ECLs, some difficulty was observed on part of the dispatchers with regard to recording completed contacts with the numerous agency personnel involved in the call down. These procedures are outlined in the St. Mary's County SOP, Attachment #2, Tab B, Emergency Notification. (Objective 2).

**Recommendation:**

It is recommended that the County develop a pre-printed form for call down procedures enabling a quick check-off of the personnel called, and the recording of the actual contact times.

**Response:**

AREA RECOMMENDED FOR IMPROVEMENT

---

Problem ID	Location/Activity	NUREG Element	Proposed Improvement Date	Confirmed Improvement Date
CCX89-15I	St. Mary's County EOC	A.2.a.		

---

**FEMA Finding:**

Although message traffic was adequately controlled during the exercise, there remains room for improvement with regard to message record keeping. All recorded messages (internal, outgoing, and incoming) were stored in the same message box, causing inconvenience for retrieval and access (such as for briefing purposes and monitoring the status of response actions or requests). Furthermore, only one message copy was generated for each message, increasing the likelihood for record misplacement. Message-keeping is required under the provisions of the County SOP, Section 9.a. (Objective 3).

**Recommendation:**

It is recommended that internal message copies be stored separately from other messages, while outgoing and incoming messages also be filed separately from each other. To enhance message control and tracking, it is further recommended that the EOC utilize a three part carbon form, providing a copy for the message originator, a central file copy to be reviewed by the SHEMA Director, and a destination copy (either for the intended internal EOC staff member or the Communications Dispatcher).

**Response:**

APPENDIX A. EXERCISE PARTICIPANTS

State

Maryland

Counties

Calvert  
Dorchester  
St. Mary's

Other Participants

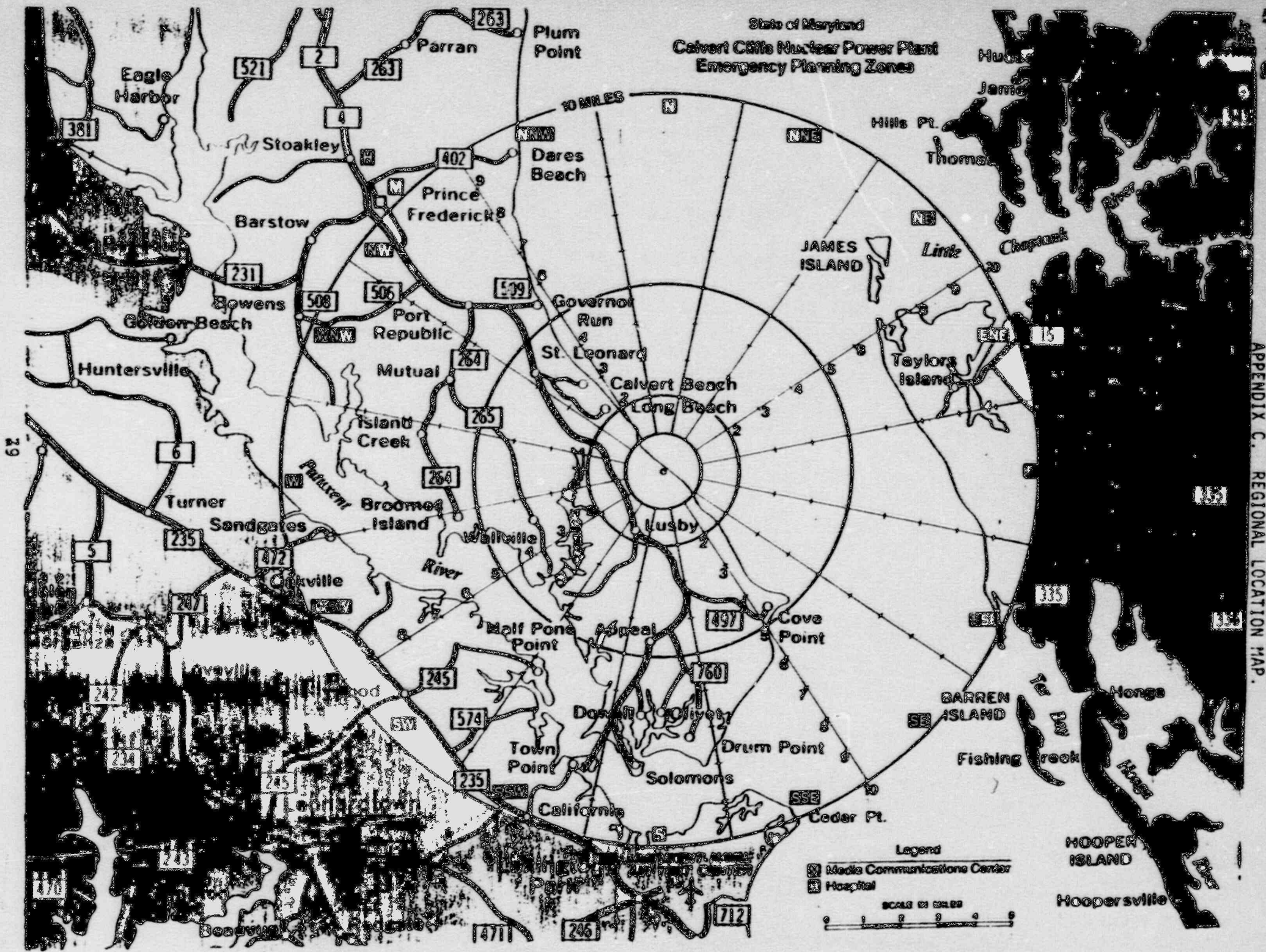
American Red Cross  
Civil Air Patrol  
Radio Amateur Civil Emergency Services (RACES)  
U.S. Coast Guard

There were no non-participating jurisdictions.

## APPENDIX B. EVALUATOR ASSIGNMENTS

Joseph M. McCarey (FEMA), RAC Chairman	Observer-at-Large
Steve Hopkins (FEMA), Team Leader	Maryland State EOC
Woodrow Brzozowski (FEMA)	Maryland State EOC
Sam Nelson (ANL)	Maryland State EOC
Gerald Jacobson (ANL)	Accident Assessment
Marty Simonin (ANL)	Field Air Sampling Teams, Western Shore
Kevin Flynn (ANL)	Field Air Sampling Teams, Eastern Shore
Ed Ronne (ANL)	Joint Information Center
Craig Conklin (NRC)	Emergency Operations Facility
Peter Weber (FEMA), Project/Team Leader	Calvert County EOC
Craig Pattani (FEMA)	Calvert County EOC
Ed Robinson (ANL)	Calvert County EOC
Walt Adams (DOT)	Calvert County Traffic/Access Control
Bill Knoerzer (ANL)	Calvert Emergency Worker Decontamination
Dale Petranec (ARC)	Calvert County Mass Care
Janet Quissel (USDA)	Calvert County Schools
Carl Hunckler (ANL)	Medical Services
Janet Lamb (FEMA), Team Leader	Dorchester County EOC
Roberta Campbell (FEMA)	Dorchester County EOC Traffic/Access Control
Tom Carroll (ANL)	Dorchester Emergency Worker Decontamination
Nick Di Tullo (CPR)	Dorchester County Mass Care
Scott Fina (FEMA), Team Leader	St. Mary's County EOC
Julie Muzzarelli (ANL)	St. Mary's County EOC

State of Maryland  
 Calvert Cliffs Nuclear Power Plant  
 Emergency Planning Zones



APPENDIX C. REGIONAL LOCATION MAP.