



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

April 3, 1986

MEMORANDUM FOR: ✓ J. Philip Stohr, Director
Division of Radiation Safety and Safeguards
Region II

FROM: David B. Matthews, Chief
Emergency Preparedness Branch
Division of Emergency Preparedness
and Engineering Response
Office of Inspection and Enforcement

SUBJECT: FEMA REPORT ON THE OCTOBER 4, 1985 EMERGENCY
EXERCISE FOR SURRY POWER STATION

1
10:49

The subject report is enclosed. There were several areas requiring corrective actions and areas recommended for improvement. A state-supplied schedule of corrective actions will be forwarded to you when we receive it from FEMA. The FEMA region will assure completion by the state of the necessary corrective actions.

The areas requiring corrective action and the areas recommended for improvement did not detract from the overall capability demonstrated by the offsite authorities, and the original 44 CFR 350 approval for Surry will remain in effect.

for *John Koster*
David B. Matthews, Chief
Emergency Preparedness Branch
Division of Emergency Preparedness
and Engineering Response
Office of Inspection and Enforcement

Enclosure:
FEMA Rpt. on 10/4/85 Emergency
Exercise at Surry

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Federal Emergency Management Agency

Washington, D.C. 20472

MAR 19 1986

MEMORANDUM FOR: Edward L. Jordan
Director, Division of Emergency Preparedness
and Engineering Response
Office of Inspection and Enforcement
U. S. Nuclear Regulatory Commission

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

SUBJECT: Exercise Report for the October 4, 1985, Exercise
of Offsite Radiological Emergency Preparedness Plans
for Surry Power Station

Attached is a copy of the exercise report for the October 4, 1985, full-participation exercise of the offsite radiological emergency preparedness plans for the Surry Power Station. The exercise report dated January 6, 1986, was prepared by the Region III staff of the Federal Emergency Management Agency.

There were no deficiencies identified during this exercise. However, there are several areas requiring corrective actions and areas recommended for improvement, as well as several minor deficiencies remaining from the October 1, 1983, exercise which will now be identified as areas requiring improvement. This report contains the initial response from the Commonwealth of Virginia to inadequacies requiring corrective actions that were identified in the draft exercise report; however, further clarification of the response and the schedule of corrective actions will be requested.

Based on the results of this exercise, FEMA considers that offsite radiological emergency preparedness is adequate to provide reasonable assurance that appropriate measures can be taken offsite to protect the health and safety of the public living in the vicinity of the site in the event of a radiological emergency. Therefore, the 44 CFR 350 approval granted in February 1983 will remain in effect.

If you should have any questions, please contact Robert S. Wilkerson, Chief, Technological Hazards Division, at 646-2860.

Attachment

~~8603270105~~ LP

FEDERAL EMERGENCY MANAGEMENT AGENCY

REGION III

EXERCISE EVALUATION REPORT

FACILITY: SURRY POWER STATION
Hog Island, Surry County, Virginia

LICENSEE: VIRGINIA ELECTRIC AND POWER COMPANY

EXERCISE DATE: October 4, 1985

REPORT DATE: January 6, 1986

PARTICIPATING
JURISDICTIONS: State, Risk and Support Counties and
Risk Municipalities as noted in Exercise Summary

NON-PARTICIPATING
JURISDICTIONS: None

~~8603270108~~ 106 pp.

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EXERCISE SUMMARY

Commonwealth of Virginia EOC

All staff representatives demonstrated a dedicated professionalism and extensive knowledge with regard to radiological emergency response procedures. Activities in general were well coordinated. Communications capabilities are equipped with multiple redundant systems.

The activation of the siren and EBS public notification systems were simulated during this exercise. Although the simulation was apparently completed within 15 minutes, risk jurisdictions were not notified in advance of the simulated activation, and recommended protective actions at times lingered at the State level prior to receipt in the jurisdictions. The recommendation to administer KI to emergency workers in the plume pathway and ingestion pathway protective action decisions were not relayed to the risk counties and cities.

Joint Media Center

The facility used to support media center activities has been greatly improved, with ample space for private meetings and media interviews. Public Information Officers were professional and displayed adequate knowledge and training within their field of expertise. The State PIO should establish procedures to ensure the development of clear, concise news releases.

Emergency Operations Facility (EOF)

Coordination and communication between the various agency representatives at the EOF were excellent. The State made use of the RAD-DOSE II program on an IBM PC which is capable of providing sophisticated dose rate calculations. Communication systems at the EOF should be reviewed and modified as required. Dose assessment personnel at the EOF should maintain active participation in the exercise with offsite authorities until all protective action decisions are satisfactorily resolved.

Primary Assembly Area

The evacuation of non-essential Surry Power Station personnel to the primary assembly area was well-coordinated, orderly, and efficiently conducted. Proper monitoring procedures were demonstrated for both persons and vehicles.

Field Monitoring Teams

Two State/local monitoring teams were dispatched from the James City County Fire Station, and one team was deployed from the EOF. All three teams demonstrated familiarity with the equipment available and air sampling procedures, although one team member could benefit from additional training in the use of the equipment.

Field communications with the EOF were cumbersome due to the need to relay information through a mobile home at the EOF which resulted in the forwarding of incorrect information in some instances. Team members were in general aware of exposure control procedures, although all team members were not provided with TLDs. Maps which identified monitoring locations were somewhat confusing in that multiple locations were provided identical position numbers.

Field Sampling Teams

Three field sampling teams were deployed during this exercise in order to collect meat, dairy, fish and water samples within the 10-mile EPZ. All three teams demonstrated proficiency in proper sampling techniques. Team members were not provided dosimetry equipment, and although by plan the teams are not designated to enter the plume until reentry and recovery operations, this equipment and training in its use should be provided to team members as a precautionary measure.

Medical Support

Medical support activities demonstrated during this exercise were limited to the transportation of a simulated contaminated injured patient from the Surry Power Station to the Medical College of Virginia in Richmond. Enroute radio communication between the ambulance and the hospital encountered problems which were adequately circumvented. Future exercises should demonstrate the actual treatment of a contaminated patient.

Traffic and Access Control

Traffic control points (TCP) during the exercise were manned by individuals who demonstrated adequate knowledge with regard to traffic control responsibilities. TCPs manned did not correspond with those locations identified within the scenario. The manning of the TCPs were not adjusted to correspond with the expansion of the evacuated areas as the exercise developed. All individuals were not provided with adequate radiological protective equipment; persons tasked with this assignment should be provided training concerning the location of decontamination facilities for the general public.

Red Cross Field Headquarters

The Red Cross Field Headquarters established at the Hampton Roads Chapter in Newport News, adequately demonstrated mass care support operations.

Isle of Wight County

Overall, the Isle of Wight County performed adequately to events dictated by the scenario. Additional administrative procedures should be initiated in the area of message handling and Radiological Exposure Control. The county should have emergency field workers, such as evacuee monitors, actually demonstrate their capabilities in future exercises and keep simulation to a minimum.

James City County

Overall activities at this location were well coordinated and individuals were knowledgeable regarding their respective roles. The number and location of telephones within the EOC should be re-evaluated, and a status board should be considered to facilitate staff briefings. Emergency public instructions drafted by the PIO were clear, precise and accurate. Although a comprehensive transportation system is in place to assist elderly and handicapped persons, a complete listing of mobility and hearing impaired individuals should be developed by the county. Some delay in the notification to Charles City regarding general emergency occurred.

Charles City County

Charles City County acts as a support jurisdiction to James City County. The Charles City Emergency Operations Center was promptly activated and sufficiently staffed with knowledgeable representatives. Registration, monitoring and decontamination of evacuees were effectively demonstrated at the Charles City Evacuation Assembly Center (EAC). Decontamination of vehicles was demonstrated to the rear of the EAC. Congregate care procedures were appropriately conveyed.

City of Hampton

The City of Hampton activated its Evacuation Assembly Center at the Hampton Colliseum to provide mass care assistance to evacuated James City County residents. Registration, monitoring and decontamination procedures were simulated and apparently efficient.

Newport News EOC

EOC staff demonstrated adequate knowledge with regard to their respective emergency response duties. Internal coordination and management of response organizations were effective. The scenario, however, did not call for the plume pathway to affect this jurisdiction; subsequently protective actions were not actually demonstrated at this location.

Surry County

Emergency activities at the Surry County EOC were well coordinated. Plans are in place to complete construction of a new EOC facility in January, 1986, which should eradicate long-standing deficiencies with regard to space, telephones, etc. at this location. The RERP should be updated to reflect changes in designated EOC response individuals. The Evacuation Assembly Center was not activated, although the Surry High School principal provided a detailed explanation of EAC operations.

City of Williamsburg

The City of Williamsburg responded to the simulated accident at the Surry Power Station in a professional and enthusiastic manner. Staffing was timely while the operations were, overall, efficient in nature. The city does need to better address the issue of mobility-impaired individuals and which agency or organization is responsible for their evacuation. The facilities presented a conducive atmosphere for responding to emergencies. The communications network provided adequate access to all concerned parties. It is evident that the city has an excellent working relationship with the two major private organizations in the area, the Colonial Williamsburg Foundation and the College of William and Mary. Consideration should be given to revising the radiological exposure control policy as it does not seem to fit well with the existing equipment. Public information can be improved by establishing a closer relationship between the PIO and the EOC staff. Radiological monitoring teams were properly equipped and well-trained with regard to air sampling procedures.

New Kent County

The Evacuation Assembly Center at the New Kent High School was activated in support of the simulated evacuation of residents from the City of Williamsburg. Monitoring, decontamination, registration and congregate care were well coordinated and adequately demonstrated. Monitoring and decontamination of vehicles was also demonstrated.

York County EOC

The York County Director, Coordinator and EOC staff sufficiently demonstrated their capability to implement the county's RERP. Activation and staffing of the EOC, emergency operations management, implementation of plume zone protective actions, and public information activities were performed satisfactorily. The EOC facilities and communications systems were sufficient. Two performance problems related to radiological exposure control, were identified; lack of high-range dosimeters, and the need for radiological field monitors to receive additional training. In addition, the plans for two facilities, schools and the York Naval Weapons Station, would benefit from further development. It is recommended that the school policy be reconsidered to eliminate the possibility of returning students who reside within the EPZ to their homes during the early stages of a radiological emergency. It is also recommended that county officials require all at-risk military facilities within their jurisdiction to arrange for non-civilian host sites.

The EAC staff at the Tabb High School demonstrated adequate capability to activate and man the EAC (for one shift); to register, monitor, and decontaminate the evacuees; and to provide suitable congregate care for evacuees. The lack of capability to provide 24-hour staffing capability was identified.

City of Poquoson

Registration procedures at the Poquoson Evacuation Assembly Center were well demonstrated. The disaster shelter staff was well prepared and performed their operations in a professional manner, and the shelter facility was adequate.

BACKGROUND

Federal requirements dictate that periodic Radiological Emergency Response Preparedness exercises be conducted in support of nuclear power plants to evaluate major portions of emergency response capabilities. The exercises test the integrated capability and a major portion of the basic elements existing within emergency preparedness plans and organizations. The exercises simulate a coordinated response by State and local authorities, along with the utility, to include mobilization of personnel and resources adequate to verify the capability to deal with an accident scenario requiring responses up to, and including, evacuation. This was the fourth full participation exercise for the Surry Power Station and the various off-site organizations.

The Commonwealth of Virginia's State and local plans and preparedness for the Surry Power Station were approved on February 23, 1983, as providing reasonable assurance that appropriate off-site protective measures can be taken in the event of a radiological emergency and are capable of being implemented. This approval was conditioned with the successful demonstration of adequacy of the public alerting and notification system in accordance with the standards set forth in Appendix 3 of the Nuclear Regulatory Commission/FEMA Criteria of NUREG-0654/FEMA-REP-1, Revision 1, and the subsequently published standards in FEMA-43.

The purpose of this report is to record the capabilities of State and local governments to respond to an accident at the Surry Power Station based upon the actual demonstration or simulation of their abilities during the October 4, 1985 joint, full participation exercise. Deficiencies will be identified from this exercise and corrective actions will be recommended which would help to improve preparedness and response capabilities.

The exercise was observed by a team made up of individuals from FEMA Region III, along with members of the Regional Assistance Committee, Argonne National Laboratory, and the American Red Cross.

EXERCISE PARTICIPANTS

State

Agriculture and Consumer Services, Department of
Air Pollution Control Board, State
Conservation and Historic Resources, Department of
(Division of Parks and Recreation)
Corrections, Department of
Emergency Services, Department of
Game and Inland Fisheries, Commission of
General Services, Department of
(Division of Consolidated Laboratory Services)
Health, Department of
(Bureau of Radiological Health and Division of Emergency Medical Services)
Highways and Transportation, Department of
Information Technology, Department of
Marine Resources Commission
Mental Health and Mental Retardation, Department of
Military Affairs, Department of
Social Services, Department of
State Police, Department of
Water Control Board, Virginia

Local Governments

Charles City County
City of Hampton
Isle of Wight County
James City County
New Kent County
City of Newport-News
City of Poquoson
Surry County
City of Williamsburg
York County

Other Participants

Civil Air Patrol (CAP), Virginia Wing
Radio Amateur Civil Emergency Services (RACES)
American National Red Cross
Salvation Army

Special Facilities

Busch Gardens
College of William and Mary
Colonial Williamsburg Foundation
Fort Eustis
Naval Weapons Station, Yorktown
Eastern State Hospital
Yorktown Colonial National Historic Park
Jamestown Festival Park

OBSERVER ASSIGNMENTS

Observer-at-Large	James Asher, RAC Chairman
Commonwealth of Virginia EOC	Karen Larson, FEMA, Project Leader Don Newsome, ANL
Emergency Operations Facility	Bob Trojanowski, NRC Bill Belanger, EPA
Accident Assessment Field Teams	Bill Belanger, EPA Jeff Slack, DOE
Media Center	Hugh Laine, FEMA
Traffic/Access Control	Walt Adams, DOT
Communications	John Sullivan, FEMA
Agricultural Sampling Teams	Anna Hart, USDA Hank Mitskas, FDA
Surry County EOC/Field Activities	Marty Frengs, FEMA, Team Leader Phyllis Becherman, ANL
Isle of Wight EOC/Field Activities	Janet Lamb, FEMA, Team Leader Dennis Figg, FEMA Judy Jones, FEMA, Exercise Coordination
York County EOC/Field Activities	Steve Hopkins, FEMA, Team Leader Al Henryson, FEMA Bill Vinikour, ANL
James City County EOC/Field Activities	Joe Gavin, FEMA, Team Leader Tom Majusiak, FEMA
City of Newport News EOC/ Field Activities	Dale Petranach, ARC, Team Leader Bill Knoerzer, ANL
City of Williamsburg EOC/ Field Activities	Rick Kinard, FEMA, Team Leader Jim Opelka, ANL Phil Kier, ANL
Medical Activities	Don Newsome, ANL

EVALUATION CRITERIA

Evaluation criteria for this exercise consisted of the planning standards in 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; the Commonwealth of Virginia Emergency Operations Plan, Annex I-V to Volume II, Radiological Emergency Response Plan, June 1983, revised November 1984, the Radiological Emergency Response Plans and Standard Operating Procedures for the risk jurisdictions of Isle of Wight, James City, Surry and York Counties and the Cities of Newport News and Williamsburg, revised September 1984, and the Radiological Emergency Response Plans and Standard Operating Procedures for the host jurisdictions of New Kent County, Charles City, and the Cities of Hampton and Poquoson.

EXERCISE OBJECTIVES

1. Demonstrate the ability to activate the Emergency Operations Facility (EOF) and State and local EOCs in a timely manner.
2. Demonstrate the adequacy of communication systems among and within emergency response organizations and between all designated facilities and field activities.
3. Demonstrate the public information aspects and abilities of each to coordinate, communicate, and cooperate.
4. Demonstrate the adequacy of the public warning system (notification of general public and messages to be disseminated).
5. Demonstrate the adequacy of accident assessment abilities of the licensee and State Bureau of Radiological Health.
6. Demonstrate the adequacy of the decision making process at State/local government to see if they conform with the recommendation for protective action/measures and the ability to implement protective measures.
7. Demonstrate the adequacy of reentry/recovery decision process.
8. Demonstrate the ability to provide the advance coordination of information released.
9. Demonstrate the ability to establish and operate rumor control in a coordinated fashion.
10. Demonstrate an ability to effectively respond to both in-person and telephone news media inquiries in a timely manner.
11. Demonstrate an ability to establish and operate a joint information center.
12. Demonstrate that internal message and information flow (collection, consolidation, and dissemination) in the EOCs ensures coordination with all affected agency representatives.
13. Demonstrate the ability of the EOC to direct field teams to perform plume, ingestion, and reentry monitoring and/or sampling.
14. Demonstrate the ability of the field teams to take environmental samples and transport the samples to collection points.

15. Demonstrate that response organizations can alert, notify, and mobilize emergency response personnel in a timely fashion.
16. Demonstrate that EOCs can be staffed in a timely fashion.
17. Demonstrate that response organizations can dispatch personnel to all appropriate locations to effect/implement protective response measures, i.e., evacuation, monitoring, assessment, assistance centers, in a timely fashion.
18. Demonstrate that the State/local government can carry out free play in the decision making process with regard to protective measures for the plume emergency planning zone.
19. Demonstrate the abilities of local governments to provide control of access to restricted areas and effectively perform a coordinated evacuation.
20. Demonstrate support from elected or appointed public officials regarding the operations process and decision making.
21. Demonstrate the capabilities of all jurisdictions to execute emergency response plans to protect the public's health and safety.
22. Demonstrate the existence and adequacy of emergency facilities and equipment to support the emergency response.
23. Demonstrate the abilities of the response organization to effectively utilize/support agencies and authorities where/when local capabilities are exceeded.

SCENARIO SUMMARY

<u>Projected Time</u>	<u>Event</u>	<u>Actual Time</u>
700	<p>UNUSUAL EVENT: Failure of Vital Bus I-2 inverter results in manual trip of Unit 1 due to loss of component cooling water.</p> <p>Fire at warehouse; offsite fire assistance requested.</p>	707
900	<p>ALERT: Oxygen bottle is damaged and propelled into the refueling water storage tank (RWST); 16" line is severed and 10" hole punched into Unit 1 RWST; contaminated injured employee.</p> <p>Loss of 200,000 gallons of water from RWST. Outside monitor less than 20mr/hr.</p>	935
1145	<p>SITE AREA EMERGENCY: Both Unit 2 source range channels display increasing count rates. Concluded that core is significantly uncovered. Outside high range monitor less than 20 mr/hr.</p>	1137
1305	<p>GENERAL EMERGENCY: Hydrogen explosion causes loss of containment integrity. Loss of 2/3 fission barriers, verified by field data.</p>	1220
1600	<p>EXERCISE TERMINATION: Onsite only.</p>	1545
1830	<p>EXERCISE TERMINATION: Offsite</p>	1645

DEMONSTRATION OF RESOURCES

- State, County and City risk and support EOCs.
- Communications systems and equipment.
- Staffing of facilities.
- Simulation of notification system (sirens and EBS).
- State Media Center, including rumor control.
- Field sampling teams (water, fish, milk, meat) and equipment.
- Evacuation Assembly Centers.
- Designated access control and traffic control points.
- Combined State/local and local field radiological monitoring teams.
- Self-reading dosimeters, dose records, TLDs and simulated KI for emergency workers.

PREVIOUS DEFICIENCIES

The following previous deficiencies were identified at the last full-scale Surry Power Station REP exercise conducted on October 1, 1983. These deficiencies were classified into major and minor categories in accordance with FEMA's procedures at that time. There were no deficiencies observed which were classified as major. Those minor deficiencies which were not fully resolved are identified as present areas requiring corrective action as defined under the Summary of Inadequacies.

State

1. Several problems were highlighted in the exercise that were either directly or indirectly caused as a result of scenario deficiencies. Lack of "play" was one of the problems and the lack of advanced information regarding technical data was another. If the technical data does not justify protective actions, artificialities such as simulated wind shifts and controller interjections must be used to insure that protective actions are demonstrated. It is recommended that when future scenarios are submitted, they include:
 - a. Technical information to enable observers to see pre-calculated doses and monitoring data. Availability of the scenario allows the full dose assessment process to be double checked by the observer.
 - b. Information on the extent of "play" anticipated in each of the local government jurisdictions, based on the technical information provided by the utility.
 - c. Artificialities that will be used to insure that proper protective actions are taken if technical data does not generate same.

Status

- Adequately addressed. Although Surry County and Newport News participation was limited during this exercise, these areas were not in direct line with the projected plume. It is anticipated that future exercise scenarios will show a varied plume direction in order to rotate the demonstration of detailed response. Also, the State should ensure that the detailed scenario with technical information regarding pre-calculated doses and action locations is submitted to FEMA for RAC review a full 45 days in advance of the exercise date in order to allow a detailed review of planned activities.
2. The State should utilize a consistent system for communicating defined areas recommended for protective actions. Communication to the localities should be either by sector or zone, and if the overlapping sector and zone systems are maintained, consistency should be reached in the transfer of protective actions from one system to the other.

Status

Adequately addressed.

3. Phone numbers as listed in the plan should be periodically updated.

Status

Adequately addressed.

4. In future exercises, access control (police and barricade materials) should be performed at the time specified in the plans. Further, a more extensive set of traffic control devices should be delivered to posts on I-64.

Status

Adequately addressed.

5. State policemen should be given more complete instructions on exposure control and dosimetry. All should have dose record forms and at least those officers stationed close to the plant should have TLDs.

Status

Adequately addressed. All State Police representatives acting as emergency workers were provided adequate dosimetry and demonstrated efficient training with regard to its use.

6. The food sampling teams should be provided with adequate protective clothing, communications equipment and procedures for reporting to the EOC for instructions, training programs on the use of dosimeter equipment, KI policies and procedures, as well as programs concerning decontamination procedures and the location of these centers.

Status

Not adequately addressed. Field sampling teams were not uniformly provided with KI and record keeping cards were not maintained. Training regarding decontamination procedures and locations of these facilities should be provided to team members.

Isle of Wight County

7. The County should initiate planning to insure that backup communications can be made operational quickly.

Status

Adequately addressed, however the county should consider obtaining an HF dipole and antenna permanently installed to assist RACES communication capability.

8. The County should institute procedures to insure that all personnel going into the EPZ will be provided dosimetry.

Status

Adequately addressed.

Surry County

9. All agencies who have a responsibility to respond to an emergency in Surry County should have a representative at the operations area.

Status

Adequately addressed.

10. All maps and charts affecting the Surry County area should be located within the view of the operations staff.

Status

Adequately addressed.

11. In the event that the EOC would evacuate to the EAC, the EAC should be equipped with backup power source and adequate communications (primary and backup).

Status

Not adequately demonstrated. A backup power capability should be provided to the Surry EAC.

12. Additional telephone lines are necessary in the EOC.

Status

Not adequately demonstrated, but should be resolved with the completion of the new EOC.

13. The Surry County plan should include a section on RACES involvement. RACES could be used as the primary communications and landline as backup to the EAC.

Status

Not considered, but communication system deficiencies should be resolved with the completion of the new EOC.

14. Medium and high range dosimetry is needed for all emergency personnel in Surry County EOC since it is located within the 10-mile EPZ.

Status

Adequately addressed.

15. The RADEF officer for the County requires training in the radiological exposure control area.

Status

Adequately addressed.

16. Rumor control number would be more effective in a separate location. This would alleviate some of the confusion in the operations area.

Status

Adequately addressed.

York County

17. The proper authorities should address the problem of the significant delays in broadcasting the simulated EBS message to York County residents.

Status

Adequately addressed.

18. The State EOC should try to ensure that significant issues, such as recommending protective actions, go through the proper channels so as to prevent any confusion, or possible misinformation from being acted on.

Status

Adequately addressed.

19. Permanent record devices, such as TLDs or film badges, should be obtained in adequate numbers for all field workers.

Status

Adequately addressed.

20. KI should be locked in the EOC so that it is available for distribution to emergency workers upon their departure to the field.

Status

Adequately addressed; procedures are in place to distribute KI to the county.

21. In addition to the "call back system" following radio/TV announcement, an alternative system should be developed to insure evacuation of the mobility-impaired.

Status

Adequately addressed.

James City County

22. The EOC should be provided with sufficient telephone lines, and the operations room fitted with overhead jacks, or some other means for quickly installing the phones when needed.

Status

Not adequately addressed. The county should consider a means of expanding commercial landline capability within the operations room.

23. A working Instaphone line should be permanently installed at the EOC.

Status

Adequately addressed.

24. Prior to their deployment to the field, the County radiological monitoring teams should be briefed regarding the current Surry Power Station status, meteorological conditions, exposure control procedures, and specific work roles.

Status

Adequately addressed.

25. Predistribution of KI, either actual or simulated, should occur during future exercises, and emergency workers should receive training regarding its use.

Status

Adequately addressed.

26. The State EOC failed to provide James City County with an updated protective action recommendation consistent with both Surry Power Station's expansion of the initially-identified affected area, and the State's protective action recommendation to neighboring jurisdictions similarly affected.

Status

Adequately addressed.

27. James City County officials did not recognize the State's failure to provide a protective action recommendation, and did not react appropriately to information indicating that protective actions were warranted.

Status

Adequately addressed.

OBJECTIVES TO BE ACHIEVED

The following objectives have not been tested:

- Demonstrate the adequacy of medical support plans and medical facilities (licensee) and State/local government.
- Demonstrate the adequacy of reentry/recovery decision process.

The following objectives were tested, but were not effectively achieved due to noted inadequacies:

- Demonstrate the ability to provide the advance coordination of information released.
- Demonstrate that the organization can carry out free play in the decision making process with regard to protective measures for the plume and ingestion emergency planning zones.
- Demonstrate the abilities of local governments to provide control of access to restricted areas and effectively perform a coordinated evacuation.
- Demonstrate the existence and adequacy of emergency facilities and equipment to support the emergency response (Surry County EOC).

Commonwealth of Virginia EOC

I. Activation and Staffing

The Commonwealth of Virginia's Emergency Operations Center (EOC) received notification of the Alert classification status at the Surry Power Station via the Instaphone dedicated line at 0948. EOC staff initiated activation of the EOC and notification of appropriate organizations at that time. EOC staffing was complete at approximately 1130. Twenty-four hour staffing capability was demonstrated via presentation of a roster, and round-the-clock notification is provided via the daily designation of duty officers during non-working hours.

The following response organizations were represented at the State EOC:

- Department of Emergency Services (Director of Operations, Deputy Director of Operations, Operations Officer, Deputy Operations Officer, Public Information Officer, Communications, Action Officers, support staff)
- Bureau of Radiological Health
- Division of Emergency Medical Services
- Department of Military Affairs
- Department of State Police
- Department of Information Technology
- Department of Agriculture and Consumer Services
- RACES

Other State agency representatives participated in the exercise from their home offices. All staff representatives displayed a professional attitude in their approach to their respective duties, and adequate knowledge and training concerning radiological emergency response.

An individual was sent to the EOF at 0957 to serve as the primary contact at that location with the State EOC.

II. Emergency Operations Management

The Director of Operations and Operations Officer effectively worked together in coordinating State EOC response activities. Periodic briefings were held with the Action Officers in order to keep the staff up-to-date on the current situation. A public announcement system was used to update the entire EOC staff of major changes in status at the Surry Power Station. All messages were copied as they were received or transmitted by EOC staff, and distributed to all representatives. The State EOC was notified of station Alert status at 0948, Site Area Emergency at 1152, and General Emergency at 1225.

The recommendation to shelter out to two miles from the plant and five miles in sectors R, A, and B was received from the EOF at 1225, along with the notification of escalation of plant status to General Emergency. Siren activation was simulated at 1230, EBS activation was also simulated at 1233. Jurisdictions located within the ten-mile EPZ were simultaneously notified of the General Emergency via the Instaphone at 1237. (The City of Williamsburg was notified by way of commercial telephone as the Instaphone at this location was not operable until 1325.)

Information regarding recommended protective actions were forwarded to these locations via commercial landline between 1242 and 1250. The recommendations to evacuate out to two miles from the plant and shelter ten miles in sectors R, A, and B was received from the EOF at 1332, to evacuate out to ten miles in R, A, and B at 1403, and to shelter out to five miles from the plant at 1418. EBS and siren activation was simulated following each of the protective action decisions. However, State EOC response to the recommendation to shelter out to five miles was somewhat belated. Although the RAD Health Officer forwarded the EOF recommendation to the Operations Officer at 1420, siren and EBS activation was not simulated until 1445, and information regarding the specific protective actions was not received at the local jurisdictions until 1455 to 1459.

A final recommendation was discussed with the EOF at 1515 to evacuate out to fifteen miles in sectors R, A, and B, and to shelter from fifteen to twenty miles in these sectors. This recommendation was based on a projected adult thyroid dose of 41 Rems at a distance of ten miles from the plant at 1600. The State EOC contacted the EOF in order to request confirmation of this data and recommendation. The projected dose was revised to 33 Rems at 1535. The State Director of Operations and Operations Officer discussed the recommendation with the RAD Health Officer at the State EOC, and although the recommendation was confirmed with the BRH official at the EOF, the State was hesitant to initiate the recommended protective actions since the projected dose was reportedly derived from a single air sample. It was administratively decided by exercise players to hold the extended shelter and evacuation recommendation at the EOF at 1543. The onsite exercise scenario was terminated two minutes later. As a result of these actions, no response was demonstrated regarding this final protective action. Follow-up conversation with the Director of Operations indicated that had the protective action recommendation been reconfirmed by additional data, and in view of the fact that evacuation plans have not been developed past the ten-mile EPZ, sheltering would have been initiated in the affected locations.

Although this decision to shelter versus evacuation may be considered prudent due to all considered factors, the simple removal of this protective action recommendation from exercise play raises question as to free play and response by exercise participants. Future exercises should ensure the continued involvement by all players until critical issues regarding population protection are resolved.

A Governor's representative was simulated as being in attendance at the State EOC.

III. Facilities

The State EOC is adequately equipped with furniture, telephones, lighting, and space to support emergency operations. A new computerized network was used to transmit public information releases between the State, utility, the joint media center, and all local EOCs.

A status board was clearly visible in the EOC operations room and was kept up-to-date on significant events.

Maps were posted which identified plume EPZ sectors and area. Information was available regarding evacuation routes, relocation centers, radiological monitoring points and population by evacuation area.

IV. Communications

The State EOC is equipped with multiple redundant means of communication to the other action points. An Instaphone links the State to the Surry control room, Technical Support Center, EOF, and local EOCs. Commercial phone and private lines were available, including a line to the Surry control room and EOF. Several messages from Surry were also received by telefax. Additional hard copy message capability is provided through the Virginia Criminal Information Network. Radio frequencies were available to various emergency response services, and RACES was available for communications with the local EOCs and EACs. Statewide and national warning systems were available, as were equipment to activate sirens and EBS.

Some operating difficulties were experienced, in that the State RAD Health personnel had difficulty reaching their contact at the EOF via the ring-down phone system. This system was eventually brought back into operation; SCATS lines and commercial landlines were used as backup.

Some delay was experienced in relaying field monitoring data to the EOF because of the necessity to use a circuitous backup route. Data were sent from Williamsburg to the State EOC, and from there to the EOF, because the direct link from field teams to the EOF was not

working properly. Delays of up to fifteen to twenty minutes occurred between the EOC's receipt of field data and transmittal of it to the EOF; however, local readings indicated background readings only (with one exception) so that this delay did not effect dose assessment activities.

V. Dose Assessment and Protective Action Recommendation

Dose projections and recommendations regarding protective actions were performed at the EOF by the BRH personnel rather than at the State EOC. The role of the EOC Radiological Health staff was one of concurrence rather than assessment.

Protective action decisions were reached for plume pathway hazards, based on EPA exposure guidelines, plant status, and weather conditions. Recommendations were reviewed and updated as conditions changed. However, transmittal of the recommendations was not always prompt. Delays of up to one-half hour occurred between RAD Health personnel's concurrence with recommendations from the EOF and final decision or transmittal of those recommendations by operations personnel to other action locations.

The use of KI was recommended for emergency workers downwind and north of the James River by the EOF at 1346. Dr. Miller of the State EOC RAD Health staff concurred with the recommendation and transmitted it to Dr. Cope of Public Health within fifteen minutes. However, the recommendation to administer KI was not forwarded to the Action Officers until 1435, and this directive was reportedly never received at the plume jurisdictions.

VI. Public Alerting and Instruction

A. Public Alerting

Notification by the EOF at 1225 of General Emergency and recommendation of protective actions acted to initiate the first simulated activation of the sirens at 1230 and of the EBS at 1233. These systems were activated (simulated) three additional times at 1335, 1416, and 1445. All simulations were completed prior to notification of the activations to local jurisdictions. Had the activation of these systems been actual, it is assumed that local EOC staff would tune to their EBS stations in order to monitor the situation for recommended protective actions. Specific information regarding protective actions during this exercise was transmitted to EPZ jurisdictions via commercial landline on the average ten

minutes following the EBS and siren simulation. It is recommended that the State EOC provide the recommended protective actions to local jurisdictions at the earliest possible time, i.e., at the time of initial notification via the Instaphone. It is also recommended that the EBS and siren public notification systems be actually demonstrated during future exercises.

The Virginia Marine Resources Commission (VMRC) was activated at 1306 to demonstrate notification of vessels on the James River and to effect evacuation of the area (not observed).

B. Public Instruction

Because EBS was simulated during this exercise, actual emergency public instructions were not drafted at the State EOC. However, information provided to the local jurisdictions regarding protective actions were clear and concise, and accurately depicted appropriate locations by area. Messages which instructed sheltering included guidance on sheltering methods.

VII. Protective Action

A. Evacuation and Access Control

Traffic and access control functions are shared between local area and State resources, but are initiated at the local level. The State Police representative utilized the Virginia Criminal Information Network (VCIN) to forward major exercise events to the State Police Headquarters and Division I and V. Water traffic on the James River was ordered stopped at 1306.

B. Special Evacuation Problems

The James City County Coordinator requested assistance at 1519 in transporting 700 patients from the Eastern State Hospital, 139 of whom required security transportation. This need was met through the provision of 3 buses and security through the Department of Corrections, and additional transportation through the National Guard. This resource requirement should be identified in the State's Operations Plans.

C. Implementation of Ingestion Pathway Protective Actions

The collection of milk samples in Surry, Virginia was requested by the Department of Agriculture at 1201; meat samples were requested at 1203, to be taken from the Williamsburg area. At 1225 the order was made to place lactating dairy cows within a

2-mile radius of the station on stored food. Milk sampling was extended to a 10-mile radius at that time (simulated). No other ingestion pathway activities were demonstrated at the State EOC; no notifications to jurisdictions located beyond the 10-mile EPZ, but within the 50-mile Ingestion Pathway area, were observed. Risk municipality observations indicate that no notification regarding ingestion pathway decisions were received from the State.

VIII. Radiological Exposure Control

The State EOC is located well beyond the 10-mile EPZ for the Surry Power Station, although it was reported that supplies of low and high-range dosimeters, chargers, record keeping cards and TLDs are available. The Bureau of Radiological Health staff were well-versed regarding proper radiological exposure control procedures. Adequate supplies of dosimetry equipment have been reportedly distributed to plume-area counties and cities.

IX. Media Relations

No press briefings were conducted at the State EOC as this is formally a function of the Joint Media Center.

The Surry Computer Network was utilized by the Public Information Office to transmit information between the State PIO, the Media Center, Surry Power Station, and local EOCs. Upon gaining total familiarity with the system, it should prove to be of valuable assistance in the distribution of emergency response information. During this exercise, however, some news releases were significantly belated within the context of the exercise. For example, the 1445 recommendation to take shelter out to 5 miles from the plant was not dispatched from the State EOC until 1649; this same message was received from the Media Center at 1536.

In addition to the computer system, the Public Information Officer maintained timely contact with the Governor's Office and local EOCs via commercial landline.

X. Recovery and Reentry

The Bureau of Radiological Health representatives at the EOF advised the State EOC that all areas were safe for reentry at 1625; local jurisdictions were notified of this information via the Instaphone at 1627. The exercise was terminated at 1645. No additional recovery and reentry activities were demonstrated at the State EOC.

Commonwealth of Virginia EOC Deficiencies/Recommendations

1. The final protective action recommendation affecting three sectors out to twenty miles was administratively withdrawn from exercise play and therefore not realistically resolved within exercise play. Future exercises should demonstrate complete participation by all exercise players to effect resolution of population protection issues.
2. The State Radiological Health and Department of Emergency Services personnel should make every effort to forward recommended protective actions to local affected jurisdictions and local field readings to the EOF as rapidly as possibly achievable.
3. In order to effectively demonstrate and allow observation of the public notification systems, it is recommended that future exercises demonstrate actual activation of these systems.
4. The State should ensure that all affected locations receive notification to administer KI to emergency workers when recommended by the Bureau of Radiological Health.
5. The State should ensure that all affected locations receive notification regarding ingestion pathway protective action decisions.
6. The Surry ring-down communication system should be reviewed and necessary corrections made to this system to ensure operability during emergency response operations and to ensure rapid transmittal of field data to the EOF.
7. Existing requirements for transportation assistance to established facilities, i.e. the Eastern State Hospital, should be assessed and incorporated, if necessary, within Emergency Operations Plans.

Joint Media Center

The Virginia Department of Emergency Services Public Information Director and two staff members were present at the Joint Media Center. The Virginia Electric and Power Company (VEPCO) had a public information representative and three staff persons at the center. The Division of Emergency Services had a call down list which identified Public Information Officers (PIO) from other State agencies. Notification of these individuals was not demonstrated during this exercise.

The State PIOs are very professional and displayed adequate training and knowledge regarding their field of expertise. They are familiar with local county and city public information counterparts.

The support staff were very competent and familiar with the new computer operations and equipment.

The facility used to support media center activities has been greatly improved. There is ample space for private meetings and for media interviews, with up to 100 to 150 media representatives which could be accommodated. A backup power supply was not observed.

The media center is not located within the plume EPZ. However, if relocation was required, this function would be transferred to the VEPCO Corporate Headquarters Media Center in Richmond. This center provides support to State as well as utility public information representatives.

Commercial phones, computers, radios and a telefax machine make up the communications network at the media center. These systems were demonstrated in contacting the State and local EOCs and the Emergency Operations Facility.

The media center was notified of Site Area at 1137, General Emergency at 1230, sheltering at 1250 and of the recommendation to evacuate the public at 1435.

Planned briefings were held on the hour, as well as several impromptu briefings as required by exercise activities. Briefings by both the State PIO and utility PIO were, at times, somewhat incomplete with regard to available information concerning the situation, and several of the State releases were in some ways confusing. This confusion appeared to center on the decision to evacuate and when or where to take shelter. These items were discussed with the State PIO who acknowledged the problems and stated that he intends to work to improve this area.

The rumor control number was activated and was announced during the press briefings. Coordination was demonstrated with regard to the rumor control number with the counties prior to its activation.

In general, activities at the Public Information Center were adequately demonstrated; however, continued practice on the newly acquired computer system and in the development of clear and concise news releases would be beneficial to PIO staff.

Joint Media Center Deficiencies/Recommendations

1. The State PIO should establish procedures to ensure the development of clear and concise news releases.

Emergency Operations Facility (EOF)

The Emergency Operations Facility (EOF) at the Surry Nuclear Power Station is a relatively new facility, and its physical layout is conducive to effective management of an emergency situation.

Representatives from the Virginia Office of Emergency Services and the Health Department were deployed to the EOF as prescribed in the Commonwealth of Virginia Emergency Operations Plan. Staffing was complete at approximately 1130. Communication and coordination between these two agencies, and with the State EOC, was excellent. Similarly, coordination within the EOF among the representatives of the Commonwealth, the utility response team members, and the representatives of the Nuclear Regulatory Commission was also excellent. Although each of these three organizations performed independent assessments of the ongoing emergency situation, the development of appropriate protective action recommendations were fully coordinated and mutually agreed on prior to implementation. The representatives from the Commonwealth satisfactorily demonstrated provisions to effect a shift change in the event of a prolonged emergency.

With regard to accident assessment, dose projection was performed using all available information including plant release data and field monitoring results. Dose calculations were performed by the State using the RAD-DOSE II program on an IBM PC with both CRT and printer output. This computer system is capable of estimating release rates based on plant conditions as well as working from a known release rate. It is capable of very sophisticated calculations, and compared very favorably with dose projections performed by the Licensee. The operator demonstrated sufficient familiarity with the system.

Hand calculations were not demonstrated in detail, although the equipment to perform these calculations was available and the State personnel demonstrated an understanding of how to use them.

Calculations were made promptly and checked for accuracy by comparison with Licensee results and with field monitoring data. The plume was correctly defined and plotted on a map by the computer system. Periodic update of the computer calculations allowed an estimate of total population dose.

Protective action decisions were reached for the plume pathway. Estimates of ingestion hazards and the associated protective actions were not observed by this observer. Decisions were based on the EPA exposure guidance. Other factors such as evacuation time and plant conditions were considered in an exceptionally competent manner. Every effort was made to minimize population exposure. The State and Licensee should be commended for their overall performance in the area of population protective actions. However, as discussed under the State EOC section of this report, a final

recommendation to evacuate between 10 and 15 miles in Sectors R, A, and B, and to shelter between 15 and 20 miles in these same sectors was discussed with the State EOC at 1515 based on a projected adult thyroid dose of 41 Rems at the distance of 10 miles from the plant at 1600. This projected dose was revised to 33 Rems at 1535. (Based on scenario technical information, however, this calculation appears to have been achieved incorrectly.) It was determined administratively to retain this protective action recommendation at the EOF and the onsite exercise was terminated 10 minutes afterwards. Dose assessment personnel at the EOF should maintain participation in the exercise until all protective action decisions are resolved.

Use of KI was considered for emergency workers, although the decision rests with the State Health Commissioner who was not in the EOF.

Emergency worker protection was addressed by the State by requiring hourly dosimeter readings by field monitoring teams. However, for some reason the dosimeter results were not radioed back to the State. This was attributed to the problem with the radio communications and the fact that the personnel operating the radio in the mobile home were not intimately familiar with field team procedures. State Radiological Health personnel expressed frustration with not being able to control field team locations to minimize dose or to obtain dosimeter readings. Again, although this was attributed to the radio problem, apparently no decision was made to send a radiological health communicator out to the mobile home.

Use of the mobile home was marginally effective in providing backup communications in this exercise, and may not be available during a real event since the EOF is located next to the plant. The EOF is equipped with its own self-contained filtered air supply and is to some extent protected from an airborne release from the plant. The mobile home does not appear to offer similar protection and may not be able to be operated next to the EOF if a real release were to occur. The State has informed the observer that new radio equipment has been ordered and will be available shortly. It is recommended that this new communication network be examined to ensure effective backup communications capability.

In this exercise, field monitoring teams were given data sheets so they would be able to transmit simulated results to the dose assessment personnel. (If controllers were available for field teams, it is assumed that this data would have been fed to the teams as appropriate by the controllers.) In this incident, however, a copy of the field monitoring dose profile was seen by the observer in the possession of the State dose assessment team. While doses were correctly calculated and protective actions demonstrated, distribution of the field monitoring dose profile should be avoided in the future because it presents advance information to the players which may mask a problem which would otherwise be seen by the observers.

Emergency Operations Facility Deficiencies/Recommendations

1. The communications network at the EOF, to include an effective backup system, should be made operable to enable rapid and efficient contact with field monitoring teams and the State EOC.
2. Future exercises should protect the scenario information from premature release to exercise participants in the EOF.
3. Radiological monitoring field teams should be instructed to periodically report their dosimeter readings to the EOF, either via primary or secondary communications systems.
4. Dose assessment personnel at the EOF should maintain active participation with offsite authorities in the exercise until all protective action decisions are satisfactorily resolved.

Primary Assembly Area

Field activity for the primary assembly area for evacuated onsite personnel was initiated with plant security employees arriving at Routes 650 and 628 at approximately 1205. These representatives set up traffic cones and unlocked chains at the assembly area located on Route 628. At 1217 State Police arrived and manned Traffic Control Points (TCPs) at Routes 650 and 628, Routes 650 and 10, and Routes 628 and the assembly area. The evacuated non-essential personnel arrived at the 650 and 628 TCP at 1220, with the procession ending at approximately 1245. The evacuation was very orderly, with all vehicles properly directed to the assembly area and quickly and systematically parked.

Once at the assembly area, plant employees remained in their vehicles with the windows rolled up. Two radiological technicians were at the assembly area and were responsible for monitoring the vehicles and employees. Proper procedures for monitoring were demonstrated. Provisions were made for isolating contaminated vehicles and to send contaminated employees to the Surry High School for decontamination. The assembly area was in regular radio contact with the Surry Power Station.

Field Monitoring Teams

Two joint State/local radiological monitoring teams were deployed from the James City County Fire Station; one team consisting of a total of three representatives from Newport News, Williamsburg, and the State Rad. Health, and the other team consisting of two individuals from Newport News and State Rad. Health. These State and local field teams worked well together in the performance of their radiological monitoring duties. The teams were professional in the completion of their duties and capable of assessing the situation. The degree of training for the local representatives was varied, however; whereas the Newport News representatives were highly trained, additional training concerning the use of monitoring equipment would be beneficial for the City of Williamsburg representative.

Both teams had a GM counter, range 0.05-100 in R/hr, and one team had an ionization chamber ratemeter. Both teams had an air pump and charcoal cartridges for air sampling. Iodine measurement equipment was available in the mobile lab. The air sampling equipment was not uniformly identified with some form of calibration label indicating recent calibration.

Field communications with the EOF proved to be somewhat cumbersome in that an extended relay system was used to transmit field readings to the EOF. This relay system was adopted due to the fact that the EOFs base station was inoperable. Field teams were required to transmit their data to the mobile lab, which forwarded the information to the mobile home used for communications outside the EOF, which then forwarded the information to utility and Rad. Health representatives in the EOF. This communication chain occasionally resulted in the transmittal of incorrect data somewhere along the link, and although observed by the field teams, it was not corrected.

The monitoring points designated on the provided maps identified several locations with identical numbers. This posed a problem for the field teams when they were directed to relocate to a location by number, in that it was uncertain as to which numbered location should be monitored. The maps should be revised to provide each location with a separate identifying number.

Field team members were equipped with low and high-range dosimeters, record keeping cards, and a charger. However, all members were not provided with TLDs. This equipment should be made available to all emergency workers with responsibilities within the plume EPZ.

A third joint State/local radiological monitoring team was deployed from the EOF with detailed instructions regarding sampling procedures provided to team members as well as information concerning plant conditions, meteorological conditions and other factors. One fireman arrived at 1320 to act as a supplemental team members.

The team was equipped with a GM survey meter and a SAM-2 analyzer and sampling pump for radioiodine. This equipment is adequate for the function of field monitoring. The vehicle used was a standard sedan with no special features such as four-wheel drive. It was equipped with several radios. It is adequate for the terrain and conditions likely to be found in the sampling area.

The GM survey meter was a multi-range instrument with sufficient sensitivity to accomplish gamma monitoring. The SAM-2 is a single-channel analyzer well-suited to radioiodine monitoring. A car battery-powered pump was available for collecting radioiodine and particulate samples. A charcoal medium was used for radioiodine sampling.

The air sampling team demonstrated proper set-up and operation of the equipment. Written procedures were not used due to the intimate familiarity of the team with the equipment. The instruments were properly operated and proper records and data sheets were filled out as the samples were collected. The procedure for measuring radioiodine in air to 10^{-7} u Ci/CC was demonstrated. The team was quite familiar with the area to be monitored. No map was necessary since the sampling point was at the end of the only road into the area.

Collection of soil, vegetation, milk, water, snow, or other samples was not demonstrated since this team's function was limited to air sampling.

Communications proved to be cumbersome with this field team as well. Again, since the EOF radio console was out of commission, field team communications were accomplished by relay through the EOF mobile home. Communications on a rudimentary level were maintained with the field teams.

Thyroid-blocking drugs were available to the field team, and the team members were familiar with procedures in the use of KI. The primary team member was equipped with dosimetry and record keeping forms and equipment. He was familiar with how often to read his dosimeter and with his allowable exposure, and knew what to do in the event of an excess dose. He was aware of decontamination procedures.

Field Monitoring Teams Deficiencies/Recommendations

1. Field team members should take the necessary steps to assure that their field readings are accurately transmitted to the EOF.
2. Monitoring teams should be outfitted with a complete complement of field equipment, as identified on their checklists, and training in the use of this equipment should be provided to all designated monitors.
3. Maps provided to radiological monitoring teams should be revised to identify each monitoring location with a separate and individual numeral.
4. All monitoring team members should be provided with TLDs.
5. Equipment should be calibrated on a yearly basis.

Field Sampling Teams

I. Meat and Dairy Sampling Teams

For the purpose of this exercise the food and dairy sampling teams were met at pre-designated locations; the dairy inspector was met at Route 10 and Route 634 and followed to Epps Dairy, Surry, Virginia, and the meat inspector was met at the CW Commissary in Williamsburg, Virginia.

The dairy (milk) sampling began at 1015 and was completed by 1030. The meat sampling (hamburger) was taken at 1230.

Due to separate sampling locations and pre-designated meeting locations, mobilization procedures could not be observed. The milk and meat sampling teams were knowledgeable of exposure control and personal dosimetry check procedures. The sampling teams were observed reading dosimetry, but records of readings were not maintained. Both teams were well aware of their responsibilities and successfully carried them out. The sampling teams reported that they would not be deployed during a release and would only take samples when the area was declared safe, during recovery and reentry based on the Post Accident Reporting System. This is in accordance with the Standard Operating Procedures for the Department of Agriculture and Consumer Services. The objective to demonstrate the ability to obtain samples was successfully met.

The milk sampling team used a hard plastic, large-mouth container to catch milk and pour into a plastic container with a screw-on lid. This method was used because the screw-on hose did not fit the milk outlet. The container used to transport the dairy sample was labelled with a black marker.

The meat sampling team placed approximately one pound of hamburger into plastic bags and tied the bags at the top to seal the openings. The two samples were placed inside a secured box with a lab form indicating a radiological sample, date, and name of establishment. A 3 x 5 on the outside of the box also contained the same information.

The equipment used by the field sampling teams to collect various samples was adequate and in accordance with the written departmental SOPs.

The dairy inspector had a copy of the standard operating procedures, the plan, and an equipment checklist. The meat inspector did not have these documents in his possession, however, the inspector was knowledgeable of SOPs and the plan. Milk and meat samples were collected demonstrating proper technique and collection procedures. The meat sample was transported to the Williamsburg Airport where the

dairy inspector and milk samples were waiting the arrival of the State Police, who were to provide air transport to Richmond for laboratory analysis. However, due to real world weather conditions, air transport via helicopter was not possible. The field sampling teams demonstrated familiarity with the local area.

Radio communication was observed between the dairy and meat inspectors during sample collection via two-way radios. In discussing communications with the field sampling teams, it was learned that should communications via two-way radio become inoperable, a commercial telephone would be used to place a call to their departments in Richmond.

The field sampling team members had the following equipment:

Protective Clothing

Rubber boots
Rubber gloves
Cloth gloves
Coveralls - cloth

Dosimetry Equipment

CDV 138 - Personal Dosimetry
CDV 742 - Personal Dosimetry
TLD

The equipment did not include tape to secure and fasten protective clothing or record keeping cards. The sampling teams were not aware of decontamination procedures or of locations of decontamination centers. KI was not included in the field sampling teams' equipment package.

II. Water and Fish Sampling Teams

The State Water Control Board provided assistance to the emergency response effort by collecting fish and water samples within the plume area. The field sampling team, comprised of two individuals, was met by the observer at a predesignated time at the Water Mill Reservoir located near Williamsburg, Virginia, and therefore mobilization procedures were not demonstrated.

The field team was familiar with the area, and has in their possession boots, gloves and tongs to assist them in the collection of the samples. Proper techniques were demonstrated during the collection process.

The field team did not have any equipment to monitor or control radiological exposure, i.e., low or high range dosimeters, TLDs, record keeping cards, anti-decontamination suits, or respirators. Team members indicated that this equipment was not necessary, as their activities within the plume-affected area would not be

requested until after any potential for contamination had passed. Although this is in keeping with the State's Standard Operating Procedures, team members should be equipped with, and be knowledgeable of, proper techniques for personal exposure control in the event that low levels of radiation remain in the area.

Field Sampling Teams Deficiencies/Recommendations

1. Field sampling team members should be issued full personal exposure control equipment, i.e., dosimetry, record keeping cards and KI and receive training concerning decontamination procedures and location of these facilities. It is noted that this deficiency was also reported during the last full-scale exercise.

Medical Support

This exercise tested only communications capabilities and the transport of a simulated patient from the Surry Power Station to the Medical College of Virginia (MCV); actual procedures for handling a patient at MCV were not demonstrated. MCV received notification about the exercise via commercial telephone, a non-public emergency telephone number. However, radio contact from the ambulance to MCV did not work. Ambulance attendants were unable to reach MCV via radio, and therefore relayed messages through Henrico County. However, Henrico County was also unable to contact MCV via radio and used commercial phone lines instead.

MCV appeared to be equipped with the necessary health physics staff, facilities, and equipment for determining contamination and providing treatment to a contaminated patient. The staff evidenced knowledge of their roles, but did not actually demonstrate their procedures. Future exercises should include an actual demonstration of medical treatment to a contaminated injured person.

Medical Support Deficiencies/Recommendations

1. Radio communications at the Medical College of Virginia should be reviewed and necessary steps taken to ensure the use of this capability.
2. Future exercises should include the actual demonstration of medical treatment to a contaminated injured patient. It is noted that this activity was included within the scenario submitted by the Commonwealth.

Traffic and Access Control

Traffic control points were observed in the counties of Isle of Wight, York, James City, New Kent and Surry, and the City of Williamsburg. The observer was unable to visit the Charles City County TCPs in the allotted time period and no conclusions are drawn relative to their performance.

Several traffic control points (TCPs) in the Isle of Wight County, City of Williamsburg and York County were visited and no officers were observed at the identified TCPs. Although York County police were not at the identified TCPs, one officer was interviewed at Route 238 and the Colonial Parkway. The officer was aware of his traffic responsibilities, however, he had no radiological monitoring equipment or protective clothing. The other officers interviewed in James City, New Kent and Surry counties were well-versed in their traffic control responsibilities and had proper monitoring equipment and protective clothing. They also were aware of the critical levels of contamination and where they would go to be decontaminated. All interviewed policemen were, however, unsure of where to send contaminated members of the public in the event they were asked for assistance in this regard.

The Commonwealth of Virginia's Radiological Emergency Preparedness Plan calls for sector evacuation. Although the participating police understood their individual traffic control responsibilities, the exercise did not demonstrate the overall ability to affect access control into the evacuated sectors. The necessary access control points were not identified and accordingly no attempt at manning any of these points were made. It is recommended that the State and/or local jurisdictions assume responsibility for the control of access into evacuated areas.

Traffic and Access Control Deficiencies/Recommendations

1. Future exercises should demonstrate the manning of all traffic control points as designated in the exercise scenario.
2. The State Police should ensure that all individuals stationed at traffic control points are provided with adequate radiological protective equipment and instructed as to the location of monitoring/decontamination facilities for the general public. It is noted that this is a repeated deficiency from the previous full-scale exercise.
3. The State and/or local jurisdictions should assume the responsibility for the control of access into evacuated areas.

Red Cross Field Headquarters

The Red Cross Field Headquarters operation was established at the Hampton Roads Chapter in Newport News to coordinate Red Cross activities in the area. This office provided leadership and guidance to local Red Cross chapters in the support of the Red Cross mass care effort. Food, cots and blankets, and non-radiological medical needs were ordered through normal Red Cross supply channels.

Communications were established via landlines, RACES support and internally by the Red Cross 47.42 Mh emergency net.

Isle of Wight EOC

I. Activation and Staffing

The Isle of Wight communications center was notified of an Unusual Event at the Surry Power Station at 0719. The Emergency Management Coordinator was notified and he verified the notification with the State EOC at 0730. All EOC staff members were called and placed on standby by 0828. Notification of upgrade to Alert status, which initiates activation of the EOC staff, was received from the Technical Support Center at 0947. Alert was declared by the utility at 0935. Staff members were informed to report to the EOC and the EOC was activated at 1022. The communications center in the Isle of Wight EOC is manned 24 hours a day. A direct telephone line to the Surry Power Plant is located in the communications center enabling activation of staff 24 hours a day. The following organizations were represented in the EOC:

- Board of Supervisors
- Coordinator
- Director
- Deputy Coordinator
- Fire and Rescue
- Traffic Control
- Transportation
- Social Services
- RADEF Officer
- Health Services
- Sheriff's Department
- State Police
- Public Information Officer
- Regional Coordinator
- Red Cross
- RACES

The staff in general displayed the training and knowledge necessary to respond to an emergency. Round-the-clock staffing was demonstrated by some shift changes, double staffing, and by presentation of a roster.

II. Emergency Operations Management

The Deputy Coordinator served as the primary Emergency Management Coordinator for this exercise. He displayed the knowledge and training necessary to manage the emergency organization. Periodic informal briefing were held by the EMC. It is recommended that formal updates be held on an hourly basis, where the Coordinator can receive a verbal update on actions taken by his response organization. Copies of the county plan and standard operating procedures were available at each staff position.

It is strongly recommended that a standard message form be devised and used by all staff members in the EOC, to include the EAC staff and RACES operators. In addition, each organization should keep its own log of actions taken. The message clerk was extremely busy throughout the day trying to sort through various sizes of papers on which messages were written.

Access to the EOC was controlled throughout the day.

The EOC was notified of the Alert status at 0947, Site Area Emergency at 1152, and General Emergency at 1228. Protective actions applicable to Isle of Wight County were received at 1242 (take shelter in Sector 9) and at 1349 (Evacuate Sector 9). When informed that 11 students from William & Mary College were in the EPZ without transportation, a bus driver was called into the EOC, briefed on radiological exposure control and dispatched at 1305 to pick up the students. However, the bus driver was not told that the students were to be simulated and waited in the EPZ for approximately 20 minutes before contacting the EOC. She was then told of the simulation and continued on to the Evacuation Assembly Center. In a real situation this could have lead to unnecessary exposure to the bus driver. It may be prudent to send trained search and rescue personnel to locate students prior to dispatching the bus since the specific location of the students was not known. Actions were taken to activate radiological monitoring teams, evacuation assembly centers, and to obtain assistance from other jurisdictions. Elected officials were present and involved in decision making.

III. Facilities

The Emergency Operations Center was located in the County Sheriff's Office in the Isle of Wight Court House Complex. The EOC is composed of a series of six offices, utilizing the largest office as an operations room. The space is adequately large, well lighted and appropriately furnished with tables, chairs and telephones. A flip-chart was used as a status board. While clearly visible and kept up-to-date on significant events, the clerk tried to include the complete message on each item. Additional training on the use of status boards is needed. Another clerk assigned the responsibility of the status board would assist the over-extended message clerk.

Since the clerk included one message per page on the flip chart, a chronological listing of events noting major items of interest and actions taken was not visible.

A map identifying evacuation zones and sectors was posted and clearly visible. Other maps, identifying evacuation routes, relocation centers, access control points and radiological monitoring points were available in the plan, but not posted. The evacuation route map was too small and extremely difficult to read. It is recommended that a blow-up map of the Isle of Wight County be obtained and evacuation routes, relocation centers, traffic control points and radiological monitoring points be posted so that they are visible to all staff in the EOC.

IV. Communications

Various communications systems were available and demonstrated at the EOC. These included commercial telephone, VEPCO Instaphone, State Police radio, sheriff and fire nets, computer net and VCIN for hard copy. Both the hard copy systems functioned well but often duplicated messages. RACES was used to communicate with the Evacuation Assembly Center and to other EOCs as backup. It should be noted that due to the small rural population of this area that few RACES operators are located in Isle of Wight County. Thus, to get adequate RACES coverage, support must be solicited from Hampton, Newport News, etc. For this reason operators are not always familiar with the EOC set-up or what equipment they will need to bring with them. Isle of Wight should look into the possibility of obtaining an HF dipole and two meter antenna permanently installed for RACES use. This would be of great help to those out-of-town RACES people who are unfamiliar with the facilities available and would preclude the possibility of not having appropriate materials with them to construct an antenna after they arrive on site. This could be accomplished at minimum cost and would greatly speed the response time.

V. Dose Assessment and Protective Action Recommendations

Dose assessment and protective action recommendations are a State responsibility. However, the County RADEF Officer did dispatch two monitoring teams who provided field readings to the EOC.

The EOF and State EOC provided protective action decisions for the 10-mile EPZ. Protective actions were updated during the exercise. The use of KI was not recommended to Isle of Wight County.

VI Public Alerting and Instructions

Activation of the Alert and Notification System was simulated for this exercise by the State EOC. However, the county EOC did dispatch back up route alert teams to advise those residents in Sector 9 to take shelter. The State EOC did not coordinate a specific time for siren and EBS activation with Isle of Wight County. Emergency response organizations should be aware of when sirens and EBS will be activated in order to advise the field workers of these decisions. Since EBS was simulated by the State, Isle of Wight was not aware of what information had been provided to the public until it was received over the teletype and the new computer system.

VII. Protective Actions

Activation of traffic and access control points was initiated at 1229. Barriers were set up at traffic control points by the Department of Public Works. Approximately 150 cars were expected. Adequate resources are available to keep traffic flowing and to assist with stalled vehicles. A game warden was dispatched in a State boat to advise fishermen to evacuate the area. The Evacuation Assembly Center staff was placed on standby at 0735 and activated at 1159.

There are two handicapped residents in the EPZ: one is blind and one is confined to a wheelchair. A bus was sent to evacuate these two individuals to the Evacuation Assembly Center. No other locally provided transportation was needed for Sector 9. There were no schools located in the area of the 10-mile EPZ affecting Isle of Wight County.

VIII. Radiological Exposure Control

Although the Isle of Wight EOC is not located within the 10-mile EPZ, dosimetry was distributed to those emergency workers performing field assignments within the EPZ. Workers were given one low-range dosimeter (0-200mR), one high-range dosimeter (0-200R), and a permanent record dosimeter (TLD). After a search, the record keeping cards were located and given to emergency workers along with instructions. All radiological equipment to be issued to emergency workers should be organized into readily accessible kits to include dosimeters, TLDs, KI, chargers and extra batteries and record keeping forms. Emergency workers should report to a central location at a specific time to receive their kits and instructions. Adequate supplies of KI were not observed in the EOC. The RADEF officer was aware of its use and maximum dose allowed without authorization. The decontamination station was set up (simulated) at the Evacuation Assembly Center. However, two CDV-777 survey meters and a Ludlam survey meter was available at the EOC. The last date of calibration

on these instructions was 1983. Monitoring and decontamination procedures were not demonstrated at the Evacuation Assembly Center either for emergency workers or for evacuees. In future exercises these procedures should be demonstrated so that observers can evaluate the capabilities of the monitors.

IX. Media Relations

A separate room was set aside for the public information function. One media representative was given a briefing and tour of the EOC. The briefing was complete and accurate. The Public Information Officer advised the local media of the situation after consulting with the State PIO. Capabilities for rumor control was adequately demonstrated.

X. Recovery and Reentry

Recovery and reentry was not demonstrated at Isle of Wight County.

XI. Scenario

The scenario was sufficient to test the capabilities of the Isle of Wight EOC staff. It is recommended that field worker responsibilities be demonstrated instead of simulated during the next exercise.

Isle of Wight County Evacuation Assembly Center

I. Activation and Staffing

Isle of Wight County Department of Social Services, Public Health and the Sheriff's Office were represented at the EAC. Social Services provided two employees for evacuee registration and billeting, Public Health supplied a medical doctor to insure adequate emergency health services and the Sheriff's Office dispatched a patrol officer to establish access/egress control. In addition to county officials, an American Red Cross member was present to assist in emergency sheltering and a RACES volunteer established radio communications with the county EOC.

Supervisory staff telephoned from the EOC to notify the above staff of their activation. Current call lists were used. Most staff arrived within 25 minutes with all present within 85 minutes. All staff members appeared knowledgeable and very competent. The lead Social Services representative briefed all staff as they arrived, including an extensive briefing of the medical doctor on the known health problems of the anticipated evacuees.

Twenty-four hour staffing was not demonstrated but would be accomplished with shifts.

II. Registration and Monitoring of Evacuees

A bus arrival was simulated at 1345. Twelve students had been evacuated from the contaminated area. School was in session so only a limited portion of the EAC was available, but the Social Services Director gave the students detailed instructions on how the EAC would be set up and how each evacuee would be handled.

Decontamination of all affected individuals and vehicles would take place at the EAC; however due to personnel constraints, monitoring and decontamination methods were not demonstrated. The Social Services Director did, however, verbally describe the decontamination process to the students. She explained that if anyone were found to be contaminated, they would remove their clothing and place it in a garbage bag for proper disposal. They would then thoroughly shower with Phisoderm and dress in EAC provided clothing. The evacuee would then proceed to registration.

Each student was given an Evacuee Registration Form. Upon completion, all students were referred to the Health Department doctor for diagnosis. If the student required only minor first aid they were treated there. If they required hospitalization, a rescue squad team was dispatched. Those not requiring medical attention were directed to the Red Cross representative for shelter assistance.

III. Congregate Care of Evacuees

The EAC was located well beyond the plume EPZ and had the capacity to shelter in excess of 500 evacuees. Should additional capacity be required, the alternate EAC, Windsor Elementary School, would be activated.

School cafeteria food supplies would be readily available for the feeding of evacuees. Special foods (infant formulas, etc.) would be obtained from local grocery stores via EOC coordination. The Virginia Department of Agriculture would also be able to provide locally stored surplus foods, should they be required.

The RACES communication link with the county EOC functioned extremely well. The State Police radio unit and commercial telephone served as backups should RACES fail. These same means would link the EAC to the rescue squad and local ambulance services.

Social Services personnel were kept up-to-date on anticipated evacuees and their medical requirements by EOC staff. The Social Services Director in turn continually briefed the Public Health doctor on this topic.

IV. Scenario

The scenario was adequate to exercise the staff.

Isle of Wight Deficiencies/Recommendations

1. More formal briefings should be scheduled on an hourly basis where the Coordinator can receive a verbal update on actions taken by his response organization.
2. A standard message form should be devised and used by all staff members to include EAC staff and RACES operators. All organizations should also keep logs of actions taken. The message log form should be used for this purpose.
3. An additional clerical person should be recruited and trained in the proper use of the status board. This will relieve the message clerk who was extremely busy during the exercise.
4. A bus was dispatched into the EPZ to pick up eleven students who reportedly had been dropped off earlier. This decision in a real situation would have caused undue exposure to the bus driver. It would have been more prudent to send trained search and rescue personnel to locate students prior to dispatching the bus since the exact location of the students was not known.

5. It is recommended that a blow-up map of the Isle of Wight County be obtained and evacuation routes, relocation centers, traffic control points and radiological monitoring points posted so that they are visible to all staff in the EOC.
6. Isle of Wight County should look into the possibility of getting an HF dipole and two meter antenna permanently installed for RACES use. This would be of great help to out-of-town RACES personnel who are unfamiliar with available facilities.
7. All radiological equipment to be issued to emergency workers should be organized into readily accessible kits to include dosimeters, TLDs, KI, chargers and extra batteries, and record keeping forms. Emergency workers should report to a central location at a specific time to pick up their kits and to receive instructions on the use of the kits.
8. Survey meters should be checked for calibration dates. The last date on the instruments in the EOC was 1983.
9. In future exercises monitoring and decontamination procedures should be demonstrated.

James City County EOC

I. Activation and Staffing

The James City County (JCC) Emergency Operations Center (EOC) was formally activated upon notification at 0947 of an Alert declaration at Surry Power Station. This notification was received from the utility by Instaphone. Prior to Alert notification, the County Emergency Coordinator, his deputy, communications staff, the County Police Chief, Red Cross personnel and a representative from Eastern State Hospital were prepositioned in the EOC along with auxiliary phones, maps, displays, etc. The EOC is located in a county building used for a variety of purposes; the offices used daily by the County Department of Emergency Services are not in this building. The EOC was fully staffed by approximately 1130. The county receives communications from Surry Power Station or the State EOC on a 24 hour basis at the County Police communications room. Persons and organizations present at the EOC in addition to the Department of Emergency Services were:

- Deputy County Administrator
- Police Chief
- Fire Chief
- School Board
- Radiological Officer
- Social Services
- Public Information Officer
- Transportation Coordinator
- Public Works
- Health
- State Police
- RACES
- Eastern State Hospital
- Colonial National Historical Park (U.S. Dept. of Interior)

Round-the-clock staffing capability was demonstrated by a combination of double staffing and presentation of a roster.

II. Emergency Operations Management

The County Emergency Services Coordinator, as called for by the county plan, was very effectively in charge throughout the exercise. The Coordinator held periodic briefings to update his staff and consulted frequently with individual staff members in reaching decisions. Copies of the county plan and checklists were available and utilized. Message handling was very efficient, although the location of phones within the EOC creates a potential problem during a real emergency where a higher volume of message traffic might be expected.

Access to the EOC was controlled by the County Police Department.

The EOC was notified of the Alert at Surry Power Station at 0947, of Site Area Emergency at 1154 and of General Emergency at 1226. A "take shelter" order was received for selected county areas within five miles of the plant at 1250 and an evacuation for selected areas out to 10 miles was received at 1426. Radiological monitoring teams were activated at 1152, reception and congregate care centers at 1215, police, fire, ambulances and the county transit authority were activated at appropriate times during the Alert.

The County Board of Supervisors were represented in the EOC by the Deputy County Administrator.

III. Facilities

The EOC is well equipped with sufficient furniture, space and lighting. There are sufficient telephones available to the EOC staff. However, a number of these phones are located in various offices in the building, not in the EOC itself. During this exercise the phones in the EOC were not overly taxed but in an actual emergency the necessity of staff leaving the EOC room to make and receive phone calls could prove to be a problem.

The current emergency classification was posted on a map primarily used to plot weather and radiation plume data. No status board was maintained in the EOC. Frequent updates by the Coordinator mitigated the effects of the lack of a status board, but a status board should be maintained. The plume EPZ with sectors labeled was posted as were evacuation routes, relocation centers, access control points and radiological monitoring points.

IV. Communications

The Instaphone system or "hotline" was used almost exclusively to receive information from the utility's EOF and the State, which functioned well throughout the duration of the exercise. The newly installed computer network was experiencing some difficulty at this location during the early phase of the exercise, although the problems were cleared up by late morning. The system is designed to function like an electronic mail system where messages entered into the system by various terminals are sent to a central processor in Richmond. Users then can query the computer to see if any traffic is being stored for them. If so, it can then be displayed to them and a printed copy received.

Radio systems available to the county include fire, police and the county administrative net. These systems are received in approximately 20 cars including ranking public officials. These cars were used to provide mobile radio communication to the radiological

monitoring teams within this jurisdiction. Roughly one-half of all county school buses are radio equipped; however, the EOC does not have a base station on the school net. To notify these units a call would have to be made to the school board by telephone.

Amateur radio (RACES) was used to communicate with the evacuation centers.

All siren activation and EBS message releases were simulated.

V. Dose Assessment and Protective Action Recommendations

County monitoring teams were activated from the EOC by the county radiological officer. These teams are based at various fire stations throughout the EPZ. As evidenced by the activities and statements of the radiological officer, the monitoring teams are well-equipped and trained and the monitoring effort was a very well organized one.

Potassium iodide was issued and its use recommended for emergency workers by the County RDO in the portion of the EPZ affected by the plume at 1427.

VI. Public Alert and Instruction

A. Public Alerting

The county's role in public alerting was limited to telephone calls to schools and special institutions. James City is one of two counties in the Surry Power Station 10-mile EPZ that can activate the siren system; however, the siren sounding was simulated in this exercise. Messages from the State EOC advising the county of simulated siren soundings did not specify exact times nor did they give advance notice.

B. Public Instruction

Emergency public instructions were drafted by the Public Information Officer and his staff. These messages were relayed to local media for dissemination. They were clear, precise and accurate. They used familiar boundaries and landmarks for defining areas of recommended protective actions.

The Eastern State Hospital and Colonial National Historical Park were represented at the EOC; other special facilities were contacted by phone. The largest special facility, Busch Gardens, was not open on this day.

VII. Protective Action

The State Police and the county police, both represented at the James City County EOC, jointly activated traffic control points in the county. For the most part, this activation was simulated. However, the county police are confident of their ability to block all access roads should it be necessary. A "canned" message was delivered to the City of Hampton from the James City County coordinator requesting rescue, wrecker and traffic control support in response to traffic jams and accidents on Route 60. James City County staff advised, however, that they would not request such assistance from Hampton in a real emergency but would contract tow truck service, etc. from local sources.

County Evacuation Assembly Centers were activated in a timely fashion. The county plan calls for the use, primarily, of the EAC at the Charles City County High School. The EAC is activated and operated by Charles City County personnel; James City County Social Services personnel act as liaison to the Charles City County EOC and to the EAC. Another EAC at the Hampton Coliseum was also activated.

A. Special Evacuation Problems

The public transportation company in James City County is owned and operated by the county government. A comprehensive transportation service for elderly and handicapped persons exists and through this service the county has a listing of many of the mobility-impaired in the 10-mile EPZ. There is not, however, a comprehensive list of all hearing and mobility-impaired persons.

Of the nearly 800 patients at the Eastern State Hospital, approximately one hundred and thirty are on locked wards and are potentially dangerous to themselves or to others necessitating special transportation arrangements. During the exercise, requests were directed to the State for State Corrections Department buses and ambulances. There is some question as to whether the needed equipment would be immediately available in a real emergency; this necessary resource should be identified and incorporated within existing RERPS.

There are sufficient buses owned and operated by the County and/or the school board to accommodate the expected number of school children and other evacuees requiring transportation.

VII. Radiological Exposure Control

The county is equipped with sufficient numbers of low-range (0-200mR) and high-range (0-200R) dosimetry, chargers, record keeping forms and TLDs for all emergency workers. An adequate supply of KI was available. The County Radiological Officer was knowledgeable in all aspects of monitoring, exposure control and decontamination.

IX. Media Relations

A room in the EOC building was designated for press briefings. Although no briefings were actually given there, the PIO delivered numerous, extended briefings via telephone to a reporter. Information given was accurate, complete and consistent with information received from the State PIO via computer teletype. A telephone number for rumor control was in working order.

X. Recovery and Reentry

County recovery and reentry activities consisted chiefly of receiving word from the State EOC that monitoring data indicated safe levels of radioactivity, and communicating to all response organizations the information that reentry could begin. Damage assessment teams were put on notice to begin evaluating any post-emergency county problems.

XI. Scenario

Overall the scenario provided sufficient activity to test major portions of the county's RERP.

James City County Deficiencies/Recommendations

1. It is recommended that the County Department of Emergency Services, in future exercises, attempt to avoid pre-positioning in order to more realistically test the ability to activate the EOC.
2. It is recommended that the County evaluate the number and location of EOC telephones in anticipation of a probable high volume of communications traffic during emergency operations.
3. A status board should be maintained in the EOC listing significant actions and events.
4. Special transportation needs, i.e., secured transportation for patients at the Eastern State Hospital, should be reviewed and identified needs incorporated into existing RERPs. The county should develop a comprehensive list of all mobility and hearing-impaired individuals.
5. There was a 23 minute delay in the Charles City County receiving notice of General Emergency. James City and Charles City Council Emergency Services Coordinators should attempt to determine the cause of this delay in order to prevent similar occurrences in the future.

Charles City County EOC

I. Activation and Staffing

This support county EOC was notified of an Alert at Surry Power Station at 1105 by the James City County EOC. The Alert was then verified by telephone. Since Charles City County is a support county, staffing is not fully activated until Site Emergency. Staffing was completed in about 30 minutes. Organizations represented included:

- County Administrator
- Fire Department
- Red Cross
- Sheriff
- Social Services
- School Board
- Recreation
- Emergency Services
- Health Department
- State Police
- Public Works
- RACES

All staff members present seemed thoroughly familiar with response requirements. The County Coordinator did not receive notification of the General Emergency declaration until after an approximate 23 minute delay. The cause of this delay was not apparent. The activation of the relocation/decontamination center was accomplished quite promptly, however.

II. Communications

The primary communications means used was telephone with RACES as backup. All notifications were handled by telephone.

III. Radiological Exposure Control

The county has five CDV-777 kits and six 777-2 dosimetry kits as called for in its plan. Permanent record dosimeters were not available. KI would be distributed by the County Health Department, if required. A physician from the Health Department was available on the Coordinator's staff who was aware of the proper use of KI.

Charles City County Decontamination Center

The facility was set up at the Charles City County High School exactly as called for in the county plan shortly after notice was received of a General Emergency declaration at the Surry Power Station. Evacuees were brought to the high school lobby where they were monitored for contamination. If clean, they were directed to the registration area in the gymnasium directly behind the lobby. The center had three monitors who could process approximately fifty people per hour. If evacuees were contaminated they would be led back down a "contaminated only" path to either the men's or women's shower. They were then instructed in decontamination procedures and directed as to disposal of clothing. They were then monitored to assure decontamination and then sent to registration.

Equipment and vehicles were decontaminated to the rear of the school by high pressure fire trucks. The plan calls for a small retention pond to be built to contain wastewater from cleaning. No retention pond nor capability to construct such a pond was observed or present. Wastewater from the showers would drain through the school's normal drain system to a sand mound which is part of the on-site septic system. The Coordinator reported that this sand mound was capable of filtering the contaminated particles. (This may be questionable without activated charcoal or tertiary treatment.) The sand could then be neutralized at a later, less critical time.

Charles City County Evacuation Assembly Center

I. Activation and Staffing

Full staffing was demonstrated at the Charles City County High School EAC. Only one firetruck was actually activated to ensure capability for non-exercise events. The center Coordinator was notified of Site Emergency at 1240 by the Charles City County EOC. Staffing was completed in approximately 35 to 45 minutes. Staff numbers appeared adequate for possibly a few hundred evacuees; additional support would probably be required for a larger number of evacuees. The center Coordinator advised that 12-hour shifts would be developed, if necessary, with available staff present and in reserve.

II. Registration and Monitoring

Efficient registration procedures were observed. Approximately ten registrars were available at the center. For this exercise three monitoring teams evaluated each evacuee prior to registration. Decontamination would take place in the school's locker rooms. Decontamination procedures were explained to evacuees upon arrival. Contaminated clothes were put in plastic bags and disposed of in collection bins. Temporary clothing would then be distributed for evacuees. Proper techniques were used to ensure contaminated possessions were isolated to prevent spread of contamination.

III. Congregate Care

The center was located well outside of the plume EPZ. It was reported that this center could support possibly 2,000 evacuees if all rooms were used. Additional overflow space could easily be obtained at middle schools and the sixteen county churches.

Sleeping accommodations would have to be supported from outside the school. Although the center was not explicitly equipped to handle handicapped evacuees, only one step was observed in the possible path of contaminated victims. Telephone lines represented the primary communication link; RACES operators served as backup.

Nursing assistance was available at the center along with immediate ambulance service.

City of Hampton Evacuation Assembly Center

The EAC at the Hampton Coliseum in the City of Hampton was staffed by representatives of the following organizations:

- Social Services
- Police
- Red Cross
- Public Works
- Fire
- Rad Halth
- Public Health
- RACES
- Environmental Health
- Mental Health/Crisis Center

Each representative appeared to be knowledgeable and adequately trained in individual functions. Mobilization in real time was not observed. A 24-hour staffing capability was demonstrated via presentation of rosters. Procedures demonstrating registration of evacuees were simulated via a walk-through demonstration of the registration process. Upon arrival at the evacuation center, evacuees would be monitored for possible contamination. If found to be contaminated, evacuees would be routed to an area near the entrance where they would be decontaminated. Contaminated clothing would be stored in large plastic bags and then in storage bins located outside the EAC. Clothing would be issued when the decontamination process was complete. If an individual was found to be contaminated after the initial shower, they would be routed to a separate shower to repeat the process. Following decontamination evacuees would be allowed to resume registration procedures. A registration form would be provided for evacuees before admittance to the EAC was allowed. Provisions to separate contaminated from non-contaminated individuals was demonstrated.

Monitoring equipment was not demonstrated. An estimated 100 people per hour could be processed.

This EAC was located more than five miles outside the 10-mile EPZ. The facility is a large arena that normally could seat 14,000 people. It was reported that an estimated 10,000 people could be accommodated on a temporary basis, although this number may be somewhat inflated. Food supplies were readily available. Frozen food from vendors would be procured, if needed, and prepared in existing cooking facilities. Additional food supplies would be obtained from the local grocery stores. A nursing station was established with access to hospital care.

Equipment for the handicapped was also available through the nursing station. Adequate water, toilets, and parking were available.

The primary means of communications was via commercial telephone. Only one phone was available to the staff. A member from RACES was available as a backup means of communications. Emergency medical facilities communications were available through the police and fire personnel.

Newport News EOC

I. Activation and Staffing

The Newport News Emergency Operations Center was notified of Alert status at 0948 via the Instaphone. The use of the Instaphone precluded the need for verification of this information. Full staffing of the EOC took approximately one hour to complete. The organizations represented at the EOC included:

- Emergency Management personnel
- Public Works
- Police
- Communications
- Utilities
- Health
- Transportation
- Human Services
- Fire
- Schools
- PIO
- Red Cross
- RACES
- CAP

A total shift change was satisfactorily demonstrated. The EMC briefed the incoming staff as did the respective individual EOC members.

II. Emergency Operations Management

The EOC Director was in complete and effective charge of EOC operations. The Director held briefings for the EOC staff as necessary. A message log was maintained and message distribution was handled through the EOC Director. Access to the EOC was effectively monitored. A phone call was placed simulating activation of the reception center and to alert other response organizations (i.e., police, fire, ambulance). No elected officials were present for the exercise although members of the City Manager's staff were present.

The EOC received notification of Alert at 0947, of Site Area Emergency at 1157, and of General Emergency at 1235.

III. Facilities

The EOC had sufficient furniture, space, lighting, telephones, and highly visible display boards. The display boards showed the plume EPZ, the evacuation routes, the relocation centers, the access

control points, the radiological monitoring points, and population by designated evacuation areas. A status board was clearly visible and was kept up-to-date on significant events. Backup power was available but was not demonstrated.

IV. Communications

Communications capabilities at the Newport News EOC were adequate to support emergency operations. The Instaphone system maintained continuous contact between the utility, State EOC and the surrounding jurisdictions. In addition to the Instaphone system, commercial phone lines and a computer system were also available. Backup systems included VCIN (Virginia Criminal Information Network), RACES, CAP, police, fire and hospital ambulance radio networks.

V. Dose Assessment and Protective Action Recommendations

As the City of Newport News was not in the direction of the plume during this exercise, no protective actions were ordered by the State or demonstrated by the City.

VI. Public Alerting and Instruction

According to existing REP plans, the primary siren activation location is the Surry County EOC and EBS activation is via the State EOC. Although the Newport News EOC Director does have a list of local TV and radio stations in the event public alerting and notification is warranted locally, the projected plume as identified by the EOF did not affect this jurisdiction, therefore, this activity was not demonstrated. Prescribed messages were part of the Newport News plan. Three messages were received from the State regarding EBS/siren systems activation at 1237, 1338, and 1418. However, notifications of all three activations were received after the designated activation times. Also, specific protective action information, although not affecting Newport News, was received somewhat belatedly, ranging from 14 to 25 minutes following the issued directive from the State EOC.

VII. Protective Actions

A. Evacuation and Access Control

Because the Newport News area was not in the projected plume, no protective actions were actually demonstrated at this location. The EMC did, however, initiate actions to take protective actions if they were indeed necessary. The State and local police representatives planned implementation of access control and traffic control points (simulated) and

discussed expected traffic volume. Actions were taken concerning the opening of reception centers, but actual opening of the centers was simulated. It is noted, however, that although these activities were simulated, in response to the effects of Hurricane Gloria the previous week, seven mass care centers were opened with approximately 6,000 people received and housed.

B. Special Evacuation Problems

The Fire Department maintains a list of mobility-impaired individuals within this jurisdiction. The Fire Department has radio communication capability with handicap vans, rescue vans, and ambulances, which could be activated if necessary.

School evacuation plans are available but were not demonstrated.

C. Ingestion Pathway

The EOC staff were familiar with ingestion pathway procedures. Two small dairy farms are located within the 10-mile EPZ.

VIII. Radiological Exposure Control

Because Newport News was not affected by the projected plume within the scenario sequence, no radiological exposure control actions were initiated. High and low range dosimetry, KI, chargers, TLDs, and record keeping cards were available in sufficient quantities. EOC staff were aware of proper procedures in the use of the dosimetry and KI.

IX. Media Relations

An area within the EOC was designated for media use and the delivery of press briefings, although no briefings were conducted. A rumor control room with ten telephones is available. Press releases from the State were shared with the EOC staff.

X. Recovery and Reentry

Not demonstrated in this exercise.

XI. Scenario

The scenario for this exercise did not provide sufficient activity to provide for the demonstration of the complete emergency response organization at this location. Many activities were simulated rather than demonstrated, although response personnel appeared knowledgeable regarding individual responsibilities.

Newport News EOC Deficiencies/Recommendations

1. Future scenarios should generate sufficient activity to provide for the demonstration of protective actions by this jurisdiction.

Surry County EOC

I. Activation and Staffing

At 0943 the County Sheriff's dispatcher received notification from the facility of Alert status, and at 0949 the EMC was notified by the dispatcher by commercial phone regarding this information. The EMC proceeded to telephone her staff, the last of which arrived at the EOC at 1035. All EOC organizations called for in the plan were represented at either the EOC or the EOC Annex (Community Services Center) located one block away from the EOC. Round-the-clock staffing was demonstrated by presentation of a roster. A representative from the State Health Department arrived at the EOC at 1400 at the EMC's request.

II. Emergency Operations Management

The Emergency Management Coordinator, as identified in the plan, performed very professionally. She was knowledgeable of the plan, was in control of the EOC operations, and effectively utilized EOC staff. Communication within the EOC was coordinated, access to the EOC was controlled and emergency activities were well coordinated. An elected official participated in the decision making as appropriate.

The EOC was notified by the facility of the following events at the following times:

Alert	0942
Site Area Emergency	1152
General Emergency	1223

At 1234 the EOC received a message stating that the Governor had proclaimed a State of Emergency and that the sirens would be activated (simulated). At 1152 the EOC issued a "take shelter" order for a 5 mile radius from the plant upon notification that onsite personnel were being evacuated. Sheltering was expanded to a 10 mile radius at 1456 upon direction by the State. The Evacuation Order for the 5 mile radius was received from the State at 1347. The fire and rescue (ambulance) units were directed (simulated) by the county to respond to an auto accident at the intersectional routes of 650 and 628.

III. Facilities

A new EOC facility is presently under construction within a half mile of the present EOC and is scheduled for completion in January 1986. It will be co-located with the Sheriff's Department, and is anticipated as being much larger and better equipped than the present facility. The previously identified deficiencies with regard

to the existing facility, i.e., inadequate space, furniture and commercial phone lines, have been considered in the planning for the new EOC and will reportedly be resolved upon completed construction.

The status board and all appropriate maps were either clearly visible or readily accessible.

IV. Communications

Communication with the State and local EOCs is primarily by commercial telephone with radio system backup. Communication with the facility/EOF is by dedicated phone line with commercial telephone used as backup. Contact with the media center and local schools is by commercial telephone. Communications with the ambulances and radiological monitoring team (fire apparatus) was simulated via two-way radio. HAM radio backup was provided at the EOC by both the Southern Peninsula Amateur Radio Klub (SPARK) and the Virginia Beach Amateur Radio Club.

V. Dose Assessment and Protective Action Recommendations

A. Dose Projection

County radiological monitoring activities were simulated during this exercise and mobilization of the teams was therefore not demonstrated, although activation of the teams was simulated at 1119. The RDO was interviewed during the course of the exercise and demonstrated adequate knowledge regarding radiological protective actions and assigned responsibilities. The plume was correctly defined and monitored. Adequate supplies of dosimetry (low and high-range dosimeters, chargers, TLDs, and record keeping cards) and field equipment (GM counter, 0.05/-100mR/hr and ionization chamber ratemeter) are reportedly available as identified on checklists and in accordance with county assigned responsibilities. Equipment is calibrated once a year.

B. Protective Action Recommendations

The Surry County EMC issued the recommendation for area residents to take shelter out to 5 miles from the plant upon notification that non-essential onsite personnel were being evacuated. Additional protective actions affecting Surry County were received from the State EOC to evacuate out to 2 miles at 1347 and to shelter out to 10 miles at 1456.

Although KI was administered to emergency workers (simulated), no recommendation was received from the State concerning administration of the drug.

VI. Public Alerting and Instruction

The EMC was notified at 1152 that the facility was evacuating non-essential personnel. The facility requested police assistance from the Surry County EOC to aid in this evacuation of onsite employees, and the Surry EOC subsequently requested and received five units from the State Police to accomplish this task. The county initiated sheltering out to 5 miles at this same time; notification to the public was accomplished in part via call-down lists, i.e., road captains were telephoned who in turn telephoned residents over commercial telephone lines. Sheltering activities were reported as being complete at 1240. Public instructions were drafted in the EOC in clear, concise language, and included guidance on sheltering methods. Notification of transients (hunters and boaters) was simulated. The subsequent "evacuation" and "take shelter" notifications were handled in the same manner after the simulated siren sounding and notification of recommended protective actions. The instructions and maps obtained within a pamphlet provided by the facility are reprinted in the back of the Surry County telephone book.

VII. Protective Actions

A. Evacuation and Access Control

TCPs were manned and reception centers were ordered to be activated in a timely fashion. Roads in Surry County were blocked to the facility. The EOC staff reported adequate resources to keep evacuation routes clear, but these resources were not demonstrated.

B. Special Evacuation Problems

Special needs and mobility-impaired persons were known by EOC staff and this information was available on written lists. Special arrangements for their transportation was simulated. Currently, no schools are reported as conducting sessions within the 10 mile EPZ.

C. Implementation of Ingestion Pathway Protective Actions

The location of the one dairy farm and the one food processing plant within the 10 mile EPZ were known by the EMC. A State Health representative arrived at the Surry EOC at approximately 1400, upon the request of the EMC, to assist in ingestion pathway protective action implementation.

VIII. Radiological Exposure Control

Adequate supplies of dosimeters, both low and high range, KI and TLDs were available for emergency workers. Records were properly kept as dosimeters were issued. Emergency workers were instructed in the use of the dosimeters and KI. The RDO was aware of the maximum dose allowed for emergency workers. EOC personnel were aware of decontamination procedures.

IX. Media Relations

A space was set aside for the media in the EOC annex, the Community Services Center. However, no briefings were given during the exercise.

X. Recovery and Reentry

Not demonstrated during this exercise.

Surry County EAC

The EAC activities were all simulated and actual demonstrations were not given. (It is noted that activation of this same facility was demonstrated satisfactorily during the previous full-scale exercise.)

The school principal, Surry High School, did, however, provide a detailed explanation of EAC operations. It was reported that emergency backup power for water pumps and lights is not available. In general, however, procedures appear to be in place to adequately set-up and man the EAC. This high school is approximately 2 miles beyond the plume EPZ. Ample toilets, drinking water, secure storage and parking is available; however, cots for evacuees are not available at the school. Holding tanks are available for contaminated waste water.

Reported available communications systems included commercial landline, ring-down, HAM radio, and police radio networks.

Surry County Deficiencies/Recommendations

1. The current EOC has had longstanding identified limitations with regard to adequate space, furniture and telephones. The county should continue its current plans in the construction of its new emergency operations facility, with a scheduled target completion date of January 1986.
2. It is recommended that emergency backup power be provided to the EAC, and that a resource for the provision of adequate cots be established should extended mass care operations be necessary.
3. The Surry County RERP should be updated to reflect changes to identified response personnel.

City of Williamsburg EOC

I. Activation and Staffing

The Alert call, received via the direct link to the utility, the Instaphone, activated the EOC. This call was received at approximately 0945 at the police dispatch center. Almost immediately staff mobilization began with the various agencies being contacted through the use of a written call list that appeared to be up-to-date. Full staffing of the EOC was completed at approximately 1145. The agencies represented at the EOC were:

- Emergency Management Coordinator
- Fire/Rescue/Radiological
- Social Services
- Schools
- Williams & Mary College
- Colonial Williamsburg
- Health Services
- Public Information
- Red Cross
- RACES
- City Council
- State Police

The staff was well-trained and knowledgeable and went about their duties in a highly professional manner. The State Police and American Red Cross demonstrated a shift change, with the second shift officer arriving late in the exercise, while some positions were double-staffed. The agencies' capability to staff round-the-clock with two 12-hour shifts was demonstrated through a roster with a principal and an alternate for each of the shifts. These rosters contained work and home telephone numbers.

II. Emergency Operations Management

The City of Williamsburg's Emergency Management Coordinator was effectively in charge of operations throughout the exercise. The Coordinator held briefings on a periodic basis, although it is suggested that the staff, in turn, be allowed to update the other responders in a group situation to permit everyone to be aware of the total response effort.

Copies of the plan, as well as checklists for the individual departments and agencies, were available for use when necessary, although they were referred to only on an infrequent basis, as the staff's knowledge of their responsibilities was excellent.

Message logs were kept, both for the overall City response and by the individual departments and agencies.

Access to the EOC was controlled by a locked door, under the direct surveillance and supervision of the police department.

The emergency classification levels were received by the City of Williamsburg at the following times: Alert - 0944 (declared 0935), Site Emergency - 1152 (declared 1137), and General Emergency - 1225 (declared 1220). Protective action decisions were revised throughout the exercise, as conditions warranted. The initial take shelter instruction was received at 1245. At 1345 the Governor directed an evacuation of certain areas and sheltering in others. At 1425 additional areas were directed to evacuate and at 1455, the last protective action message was received, calling for sheltering in other designated areas.

Radiological monitoring teams, police to man traffic control points and New Kent County (Williamsburg's support county for mass care activities) were contacted in a timely manner.

Both the Mayor and one of the City Councilmen came to the EOC at different times during the exercise to be briefed about the status of the emergency and the City's response.

III. Facilities

The City of Williamsburg EOC had sufficient furniture, space, lighting and telephones to allow for an adequate response to any type of emergency. Noise was adequately controlled by locating RACES personnel in another room. Backup power is available and, if necessary, facilities to support extended operations would be established in the fire station across the street from the EOC.

The emergency classification levels were posted and a status board was clearly visible to all responders and was kept up-to-date for all significant events. By placing the Instaphone with a speaker in the EOC, this allowed the responders to be fully aware of all major announcements from the EOC or State EOC.

Good maps were posted with information such as sectors and evacuation zones, evacuation routes, evacuation assembly centers, traffic control points and radiological monitoring points.

IV. Communications

Communication links existed with all organizations to which a municipal EOC should need to communicate. The city relied heavily on Instaphone and commercial telephone, although the fire radio net

provided communication with ambulances and radiological monitoring teams. RACES provided some primary or secondary backup, especially to the support county. Instaphone and RACES provided conferencing capabilities of a sort with local EOCs, the State EOC, and the Surry EOC.

A computer and printer provided hard copies of public information messages. Except for very late in the exercise, the hard copy messages were received with long delays of one to several hours. These long delays deprived the local PIO of timely public messages.

During the exercise, the Instaphone receiver malfunctioned for a while. When the Instaphone was down, the backup systems proved to be adequate.

V. Dose Assessment and Protective Action Recommendations

Not applicable to the City of Williamsburg.

VI. Public Alerting and Instruction

Since siren activation was simulated, the need for route alerting was not demonstrated as it could not be determined if there were any siren failures. Therefore, the EOC's public alerting responsibilities were mainly directed toward Colonial Williamsburg, the College of William and Mary, and primary and secondary schools. As information became available to the City it was passed on to the representatives of the College of William and Mary and the Colonial Williamsburg Foundation, both of which were located in the EOC, who would then relay the information to their colleagues at their respective locations.

The schools were not actively involved in this exercise and thus the school representative was not in attendance in the EOC throughout the exercise. The schools were contacted as the exercise progressed, especially in terms of necessary protective actions.

VII. Protective Action

A. Evacuation and Access Control

Traffic control points were promptly activated in a cooperative effort between the City of Williamsburg Police Department and the Virginia State Police. Local resources would be called upon to assist in clearing evacuation routes in the event of bad weather or stalled or wrecked vehicles. As simulated events at the Surry Power Station deteriorated, New Kent County was kept apprised of the situation. The evacuation assembly center was activated in a timely manner.

B. Special Evacuation Problems

The handling of mobility-impaired individuals was somewhat uncoordinated. The City's RERP states (page 1-3) that it is the responsibility of the Department of Social Services to identify those individuals who require special transportation for evacuation. The Social Services representative was aware of only one individual requiring transportation assistance. The fire chief, on the other hand, had a comprehensive list of those requiring transportation. Yet, the EMC was not aware of the existence of this list. Arrangements (simulated) for the evacuation of these individuals was not observed.

Both Colonial Williamsburg and William and Mary have standard operating procedures triggered by emergency classification levels. At the Alert, Colonial Williamsburg key personnel are notified; at Site Area Emergency more personnel are notified and are ready to respond to a General Emergency and protective actions. At the General Emergency, visitors are alerted and given instruction. If necessary, most visitors, even during the peak season, can take temporary shelter in three large conference halls.

William and Mary's SOPs are different. At Alert, classes are cancelled, students are directed to dormitories, and faculty are sent home. At General Emergency, all non-essential personnel are evacuated; at Evacuation the campus is closed.

If the situation at Surry is evidently worsening during the Alert stage, the schools would be closed and the children sent home; this would happen at the latest at Site Emergency. In a fast-moving event, the children would be bused directly to host locations at Norge Elementary School or Lafayette High School. As discussed within this section under the York County observations, school officials may consider a sole approach, i.e., evacuation, towards protective actions involving students.

C. Implementation of Ingestion Pathway Protective Actions

The City of Williamsburg received no notifications regarding ingestion pathway protective action decisions from the State.

VIII. Radiological Exposure Control

Low-range, self-reading dosimeters (CDV-138's) and TLDs were issued to the City's emergency workers (except for City police officers manning traffic control points), along with record keeping cards. Individuals responsible for radiological exposure control were observed zeroing the dosimeters prior to their distribution. Adequate supplies of CDV-138's and TLDs are available but, according

to the RERP, sufficient numbers of high-range, CDV-742's (6), are not available. This is of concern because the plan instructs emergency workers that they need not leave an affected area until after they exceed the emergency worker PAGs (25 Rem, whole body). This level could only reasonably be measured on a CDV-742. The plan does call for an emergency worker to report any time his dosimeter goes off-scale so that his case can be evaluated. Without a CDV-742, this could seem to be a cumbersome process as the worker would have to have his dosimeter continuously recharged in order to ensure he does not exceed 25 Rems.

A representative of the Health Department was on hand in the EOC throughout the exercise, who made arrangements to have an adequate supply of potassium iodide on hand for emergency workers.

It was evident that the people responsible for the control and issuance of dosimetry and KI were knowledgeable about their use, including the proper procedures for decontamination.

Ventilation of the EOC was shut off when the City was impacted by the take shelter order and was prepared to relocate to the New Kent County EAC once the evacuation had been completed.

IX. Media Relations

Space was set aside for press briefings in the lobby of the police headquarters building where the local public information officer (PIO) was located during the exercise. Briefings were not given because no media representatives appeared.

Upon arrival, the local PIO telephoned the State PIO and gave him the local PIO's telephone number. The local PIO called the State PIO late in the exercise to confirm that he had the correct telephone number because the City PIO had not received any telephone calls from the State PIO (who was reported to have responded that he was too busy to call).

Williamsburg police personnel promptly relayed hard copy public information messages to the local PIO when received via the computer printer; however, because the messages were received so late, the local PIO, isolated in the lobby, would have been able to give the media only obsolete information if he had not fortuitously heard fresh information on the Instaphone several times. Because of the tardiness with which hard copy messages were received and the lack of direct telephone communication between the State and the local PIOs, improvement is needed so that the media will not receive stale,

misleading information from the local PIO. The suggestion of the Emergency Coordinator that the City PIO be stationed in the EOC to be better informed and go to the lobby only when media representatives arrive would certainly be a positive step.

A controller inserted message was directed toward rumor control involving a siren not being sounded. The local PIO's response was inappropriate because he responded in terms of exercise conditions instead of actual emergency conditions, stating that sirens were not heard because the sounding was only simulated in this exercise. When discussing this situation with the EMC, the Coordinator concurred in the PIO's response, adding that a message received by the City confirmed the simulated siren sounding and EBS activation. Thus, rumor control was not demonstrated in a very successful manner.

X. Recovery and Reentry

Not demonstrated in this exercise.

XI. Scenario

The scenario provided the City of Williamsburg sufficient opportunity to exercise fully all aspects of its radiological emergency response plan.

City of Williamsburg Field Monitoring Teams

The field monitoring teams from Williamsburg carried proper equipment and were familiar with how to operate the equipment to measure ambient air radiation levels. They were familiar with exposure control and decontamination procedures. Good communication was maintained with the controller at the EOC.

All the field teams of the Williamsburg Fire Department were dispatched in a timely fashion at 1055. They had been activated at 0930, after receiving a telephone call or a radio page. Field team "B" arrived at its location at 1110. Before deployment, the team was briefed on plant conditions but not on exposure control or meteorological conditions.

The Williamsburg City team "B" had a Ludlum 14C and CDV-715, excellent instruments for measuring low and high ambient radiation levels. The CDV-715 had not been calibrated since 1981 and the Ludlum 14C had not been calibrated since 1983. The Ludlum was source checked before the team was deployed.

Team "B" knew how to operate their detectors to measure ambient radiation. They made their measurements holding the detector outside the car with the windows of the car rolled up to prevent contamination of the inside of the car.

Team "B" communicated with the dispatcher at the fire station, who in turn communicated with the field team controller at the EOC. Communication was properly maintained throughout the exercise. Hand-held radios were also available to the teams.

Field Team "B" had protective clothing and proper dosimetry (TLDs and 0-200mR and 0-200R pocket dosimeters). They read and recorded their pocket dosimeters regularly. The team knew about authorized doses but did not know the numbers in the plan (500mR and 2R). The team was aware of what to do in the event of contamination.

City of Williamsburg Deficiencies/Recommendations

1. The evacuation of mobility-impaired individuals needs to be better coordinated. The plan (1-3) states that it is the responsibility of the Department of Social Services to identify those individuals who require special transportation for evacuation. The department was aware of only one individual. The Fire Chief had a more comprehensive list, but the EMC was not aware of the existence of this list. It is suggested that one department be given the responsibility for maintaining a list of mobility-impaired requiring transportation and in future exercises at least simulated arrangements should be made for their evacuation.
2. Field monitoring equipment needs to be recalibrated. In some cases it has not been calibrated since 1981.
3. City police manning traffic control points were not issued dosimetry. Exercises should be used to allow police personnel to become familiar with this specialized equipment and the reporting procedures.
4. The responders should be cognizant that they are responding to a simulated emergency and act accordingly. An inserted message from the controller to the PIO from a citizen said he heard a rumor that the sirens had sounded but he did not hear the siren near his house, and that the siren is always noticeable during tests. The PIO's response was that this is an exercise and that sirens were only simulated. The EMC's response was essentially the same, adding that he had received a message that the sirens had been activated (simulated). The proper response would be to explore instituting route alerting in the area where the siren was not heard, suspecting possible siren failure.

5. Public information in general was weak basically due to the fact that there was little up-to-date information available to the PIO. This was partly due to the PIO being located in the lobby of police headquarters, isolated from the EOC. The Coordinator did provide the PIO with status updates, but the PIO was unable to follow the City's response on a continuous basis. The suggestion of the EMC that the PIO be located in the EOC and to utilize the lobby only for media briefings would be an improvement.
6. The plans for radiological exposure control and the equipment to be utilized by emergency workers do not mesh well. To require an individual to report his readings everytime his CDV-138 goes off-scale and yet potentially allow him to absorb 25 Rems is a very cumbersome process in that repeated calibration of the dosimeter would be necessary, and accurate exposure control difficult.
7. The field monitoring team did not know at what value of exposure authorization was needed to remain in the plume. The teams should receive further training in procedures for authorization to exceed doses stipulated in the plan.
8. It is suggested that the EOC staff brief the EMC periodically in a group setting so that all individuals will have a clear understanding of the City's overall response.

New Kent County

New Kent High School Evacuation Assembly Center

Evacuees were directed from Williamsburg, by traffic control policemen, to the reception and congregate care facility at New Kent High School. The activities of monitoring, decontamination, registration, and congregate care were well coordinated and were carried out by an adequate number of trained staff.

Red Cross, social services, fire and police departments were present from both Williamsburg and New Kent. RACES was also available. Staff were present and on duty when the evacuation buses arrived in real time. Backup staffing was indicated by double staffing of the various positions.

Registration of evacuees was performed by Social Services after they had been monitored and decontaminated (if necessary). The evacuees who chose to stay at the congregate care facility were well cared for by the Red Cross, who provided food (real) and sleeping accommodations (simulated). Five nurses were present, if necessary. Social Services and the Red Cross were prepared to move overflow evacuees to New Kent Grammar and Middle Schools. Nobody was allowed into the congregate care facility without a registration form.

Monitoring and decontamination were performed by fire department staff and volunteers, using primarily CDV-700's. Not all the monitors had head phones (an inconvenience which would slow up monitoring) and occasionally the monitors let the detector touch the persons they were monitoring. This could have contaminated the detectors. Contaminated people were sent to the showers (simulated) and contaminated vehicles were washed down (simulated) on the practice football field. Contaminated articles were disposed of in barrels (simulated); and shower water was properly sent to the sanitary sewer system; and vehicle wash water was disposed of in the grass of the practice football field.

New Kent County Deficiencies/Recommendations

1. Monitors designated to this function at the Evacuation Assembly Center should be provided a refresher course in proper radiological monitoring procedures.

York County EOC

I. Activation and Staffing

The York County EOC has a direct communication link with the Surry Plant via the Instaphone system. This system is monitored on a 24-hour per day basis by emergency communications personnel at the York County Sheriff's Office. Activation of the EOC was initiated upon receipt of the Alert notification, via Instaphone, at 0947. Staff notification, using call-up lists, occurred promptly. While the county's emergency plan specifies that the EOC staff are to be notified at the Alert stage, complete staffing is not required until Site Area Emergency is declared. Nevertheless, all designated staff members except the Radiological Officer were present at the EOC before the Site Area Emergency stage. By 1212 the EOC was fully staffed with representatives from the following organizations:

- County Emergency Services
- Social Services
- Health Department
- Sheriff's Department
- School Superintendent
- Public Works
- Fire and Rescue
- Citizen's Committee
- RACES
- Red Cross
- York Naval Weapons Station
- National Park Service
- State Emergency Services Regional Coordinator

The staff displayed generally good knowledge and training. Round-the-clock staffing capabilities were demonstrated by presentation of a roster.

II. Emergency Operations Management

The overall management of York County's emergency response was effectively accomplished by the Director of Emergency Services, as specified in the plan. He was competently assisted by the Coordinator and Assistant Coordinator of Emergency Services. This management team worked together in a complimentary manner, with no discrepancies, contradictions in directions, or other instances of overlapping authority noted.

Information sharing between the EOC staff members and the operations managers was commendable. Either the Director or Coordinator, upon receipt of all significant messages, held an oral briefing to inform the entire staff. During the General Emergency phase, the Coordinator conducted several staff debriefings, during which

representatives from each organization orally reported their activities. This served to keep all EOC staff members advised of the status of both external events and the county's corresponding response actions. Staff members were involved in decision making, as appropriate, and unless there were problems, were left to perform their responsibilities without unnecessary involvement on the part of the operations managers.

Copies of the county plans, operating procedures and checklists were available and referenced by the staff. Message handling was efficient, with messages logged prior to distribution to the appropriate individuals. Access to the EOC was effectively controlled by uniformed rangers from the Yorktown Colonial National Historical Park.

Significant events occurred at the York County EOC at the following times:

Receipt of Utility's Alert Notification	0947
Receipt of Utility's Site Area Emergency Notification	1152
Receipt of Utility's General Emergency Notification	1226
Receipt of Governor's Shelter Directive for Areas 6, 8, 9, 18, 22	1242
Receipt of Governor's Evacuation Directive for Areas 6, 8, 9 and Shelter Directive for Areas 18, 19, 20, 21, 22, 23	1349
Receipt of Governor's Evacuation Declaration for Areas 6, 8, 9, 18, 19, 20, 21, 22, 23	1426
Receipt of Governor's Shelter Directive for Areas 4, 5, 7, 10, 14	1457

This schedule illustrates that the county was notified of the Governor's protective action decisions in four phases. The first phase did not affect the county, as none of the areas designated for sheltering are within the jurisdictional boundaries. The second phase of protective action was for evacuation of areas close to the facility and sheltering in other areas downwind, but farther away, including portions of York County. This resulted in an apparent discrepancy, where areas as far as six miles upwind of the plant (hence, unaffected by the plume) were being evacuated, while the populace within the designated areas located downwind (within the plume), and as close as four miles, were instructed only to take shelter. This apparently resulted from a combination of factors - the configuration of the designated Protective Action Areas, the policy to implement protective actions throughout the entire area,

even if only a small portion is affected, and the intervention of the James River between the facility and the downwind areas designated for sheltering. To their credit, county officials noticed the apparent discrepancy immediately, and promptly contacted the State EOC for clarification. They were advised that State officials were aware of the situation, and were in the process of expanding the evacuation zone. That occurred about 35 minutes later, when the county was notified that the Governor had declared that all areas previously designated for sheltering were to be evacuated. The fourth and final phase of protective actions was again for areas not within York County's jurisdiction.

In implementing Phase II and Phase III of the protective actions, the county staff took the appropriate actions to coordinate emergency activities. The county radiological field monitoring teams were activated at about 1215. The Evacuation Assembly Center was activated at 1230, almost two hours prior to receipt of the evacuation notice. Coordination with other political jurisdictions, particularly the State and the City of Poquoson, which provided mass care support, occurred as necessary throughout the exercise.

The County Commissioners were not present and actively involved in decision making during the exercise, although they were represented by the County Administrator, who served as Director of Emergency Services. It is recommended that county officials participate in future exercises.

III. Facilities

The York County EOC was located in the basement of the County Courthouse. The facilities at the EOC were very good, providing sufficient space, furniture, lighting and telephones. Separate rooms were available for Operations, RACES, Rumor Control, Communications, Sheriff's Department and Fire and Rescue Departments. Thus, noise and confusion normally associated with peak activities were minimized. Maps depicting the EPZ, evacuation routes, relocation centers, access control points, population distribution, and radiological monitoring stations were all posted. The status board was clearly visible and kept up-to-date on significant events.

IV. Communications

The Instaphone system was the primary means of communication linking the York County EOC with the Utility, the State EOC, and other local EOCs. Commercial telephone served as the secondary system, and the new computer net, linking the State and local EOCs, provided the capability to transmit and receive hard copies of messages and news releases.

Commercial telephone was the only demonstrated means of communication between the county EOC and the county PIO (who operated from the Administration Building), and between the county PIO and her counterparts at the State EOC and the media center. The PIO also used the telephone to contact the local EBS station and other local media.

Communication between the county EOC and the schools and Evacuation Assembly Area was primarily via telephone. RACES provided radio backup to the EAC, and RACES operators accompanying the radiological monitoring teams provided the primary means by which they reported their field readings. RACES also established a high frequency radio link to the State EOC which provided another backup system.

The Sheriff's Department and fire and rescue radio nets provided county-wide communications with emergency vehicles such as patrol cars and ambulances. Also available was a mutual aid frequency which links York County, James City County, and Williamsburg.

These systems provided adequate communications capability, and no communications equipment problems were observed.

V. Dose Assessment and Protective Action Recommendations

A. Dose Projection

York County dispatched three field monitoring teams to collect data for use in dose assessment. The field activities were capably directed from the county EOC by the Radiological Officer. The county has established fixed monitoring points, delineated on a map, at appropriate locations throughout the plume zone. County officials reported that, during an actual emergency, field readings received from the teams would be forwarded to the State EOC, where it would be used in the accident assessment calculations. York County field team operations are described elsewhere in this report.

B. Protective Action Recommendations

There was no demonstration regarding KI. As the county was not advised by the State EOC as to whether or not a decision concerning its use had been made, county officials assumed that the use of KI had not been authorized.

VI. Public Alerting and Instruction

York County has no responsibility for activating either the siren system or EBS, which are the primary means for alerting and notifying the public of a radiological emergency at the Surry Power Station. The county received notification from the State EOC at 1237 that the Governor had declared a State of Emergency, and that the sirens had

been activated at that time. No prior coordination regarding the time for siren/EBS activation occurred. The coordinator assigned someone to monitor the local EBS station, but, as EBS was not actually activated for the exercise, this activity was simulated.

The county has a list of residents living near each of the sirens who have agreed to monitor siren soundings and report failures during regularly scheduled tests. In order to identify siren failures during an actual emergency, county officials reported that these residents would be contacted. If failures were reported, route alert vehicles would be used as backup. This also was simulated, as the sirens were not actually sounded.

By the time the county EOC was advised of the simulated siren sounding, special facilities identified in the plan had already been notified of the emergency by calls placed during the Alert phase. The schools had also been notified, as the Superintendent simulated closing the schools during that phase, as well. Route alerting, performed by the Sheriff's Department, was simulated following the second and third phases of protective actions, within the areas affected. The units had previously been placed on standby following the first phase of protective actions, which did not affect York County.

The county RERP specifies that after EBS activation by the State, the county is to provide public information and instruction in the form of EBS messages and general news releases. This duty was performed by the PIO. Protective action instructions, based on precripted messages contained in the plans, were generally clear and appropriate to the situation. Protective action areas were identified in terms that were familiar to local residents. Following each significant event (change in emergency status and/or protective action notification) the PIO simulated contacting the local EBS station to confirm that they had received the appropriate information from the State EOC.

VII. Protective Actions

A. Evacuation and Access Control

The Sheriff's Department acted promptly to simulate establishing the five access control points designated in the plan for the areas affected by the evacuation. According to Sheriff's Department representatives, the State Highway Department has appropriate resources to clear the major evacuation routes of snow, if necessary, and county Public Works Department equipment and/or commercial tow trucks are

available to remove obstacles such as stalled or wrecked cars. As only five ACPs were needed to block all access by road, the EOC staff reported that county resources were adequate. Should additional personnel or vehicles be needed, however, help would be available from the State Police.

The Evacuation Assembly Centers at Tabb High School and Poquoson High School were activated in a timely manner.

B. Special Evacuation Problems

The EOC staff were aware of the location of mobility-impaired individuals. The county Social Services representative has a list identifying approximately 15 such individuals, including their particular special needs. Arrangements for transporting these people were simulated using rescue squads and school vans with wheelchair lifts.

The Superintendent of Schools is in charge of providing transportation for both students and transit-dependent residents. The county owns 26 radio-equipped school buses which, according to the Superintendent, is adequate for these needs. The Superintendent simulated mobilizing 20 of these buses in response to the Governor's Evacuation Declaration, which was received at 1426.

The County's policy for dealing with schools during an emergency was discussed and simulated. In the case of a relatively slow-breaking incident, according to the county plan, the schools will be closed at an early stage, prior to General Emergency, and the students sent home. Presumably, they would take protective actions with their families if that later became necessary. This is the policy that was demonstrated during the exercise, with the Superintendent simulating closing the schools during the Alert phase. Only during a fast-breaking incident would those schools within the EPZ be evacuated to a host site beyond the EPZ. It is recommended that this policy of returning students to their homes within the EPZ during an emergency be re-considered. The most serious potential problem is that parents, for whatever reason, may not be home during normal school hours, and may not be able to return in time to meet their children when they arrive home. Furthermore, this policy does not provide the maximum protection for the students who reside within the EPZ. A rapid and unexpected degeneration of the onsite status, following the decision to send the students home, could result in their exposure if an unforeseen release

occurred. Another consideration is that the simultaneous closing of all schools would require all of the county's readily available transportation to be committed to transporting the students home, with no reserve for precautionary evacuation of other facilities or institutions. Finally, should the county school system elect to remain with the existing procedure of returning students to their residences or transporting them to a designated relocation center, parents may not be clearly aware of where they may meet up with their children. For these reasons, it is recommended that county officials reconsider the present planning policy which provides the opportunity for the early closure of schools. It is recommended that a single policy, evacuation to the designated host site, implemented regardless of whether the event is slow or fast-breaking, be considered.

Representatives from two special facilities located within the EPZ, the York Naval Weapons Station and the Yorktown Colonial National Historical Park, participated at the EOC and simulated implementing their respective plans.

The National Park Service, which operates the Yorktown Park, has an adequate plan for evacuating and closing the facility. Rangers would be stationed at several key intersections to control access and direct traffic. Other rangers, in vehicles equipped with public address systems, would patrol park roads to alert and notify visitors. As the park has driving roads only (no hiking trails), it is assumed that virtually all visitors would be in vehicles. Departing visitors would be directed to York County's EAC for radiological monitoring.

Notification of the park is the responsibility of the York County Sheriff's dispatchers. Park officials maintained telephone contact with their liaison at the County EOC to keep abreast of events, as they would in an actual emergency. The ranger station is also equipped with scanners for monitoring emergency frequencies. Dosimetry consisting of high and low range dosimeters and TLDs has been predistributed to the ranger station. There would be further distribution to all staff members upon the occurrence of an incident. The workers have been instructed not to exceed an exposure greater than 10mR.

The present plans for evacuating the York Naval Weapons Station, as demonstrated during the exercise, call for sending all personnel to the York County EAC. According to facility representatives at the county EOC, the combined military and civilian daytime population is about 2,500. This could

overburden the rather limited monitoring and sheltering capability that presently exists for the county, even with the support of the City of Poquoson. According to some county officials, recent discussions with Navy personnel have revealed the possibility that arrangements may be made for a nearby military facility to provide a host site should the weapons station have to be evacuated. This would be a more realistic plan, and it is recommended that county officials encourage the at-risk military facilities within their jurisdiction to pursue such arrangements. The Naval Weapons Station presently has ample transportation resources to meet their needs, and even has trained radiological personnel to monitor and, if necessary, decontaminate the staff. By completing arrangements to obtain a non-civilian host site, the Navy could remove a significant burden from the county.

C. Implementation of Ingestion Pathway Protective Actions

There was no evidence that York County received any recommendations or information from the State EOC regarding ingestion pathway protective actions. Implementation of ingestion pathway protective actions should be demonstrated in future exercises.

VIII. Radiological Exposure Control

As the York County EOC is located beyond the 10-mile EPZ, the staff (excluding field workers) do not require dosimetry. For the field teams, the county had an adequate quantity of TLDs, low range dosimeters, chargers and record cards. The county did not have high range (0-200R) dosimeters, as required by the plan. The low range (0-200mR) dosimeters are not adequate in and of themselves to provide a reliable exposure indication for emergency workers. A sufficient quantity of high range (0-200R) dosimeters should be obtained and predistributed to the county.

The county Radiological Officer was sufficiently knowledgeable concerning procedures for the use of dosimetry and KI, maximum allowable exposure, and decontamination procedures. The field team members knew how to calibrate and read the dosimeters, but were not knowledgeable on how often to read them. They also did not know the maximum allowable exposure or the procedures for decontamination. The field monitoring team personnel were also unfamiliar with the use of KI. The York County field team members should be provided additional training regarding all aspects of radiological exposure control.

IX. Media Relations

The York County EOC had a very efficient system for handling media relations. A rumor control room was established at the EOC, while the Public Information Officer was stationed at the County Administration Building down the street. Incoming rumor control calls were answered by the rumor control operator when possible; otherwise they were referred to the PIO. Media representatives or others coming to the EOC were referred to the PIO by the guard so that operations at the EOC were not disrupted.

No briefings were known to have occurred, although space was available at the administration building. The PIO was kept informed of EOC events by the rumor control operator. The PIO demonstrated thorough coordination with the State PIO and the York County Coordinator concerning release of information to the media. The PIO could alert the public via EBS and Dedicated Local Government Information Network provided by the local cable TV station, although contact with these was, for the most part, simulated. The PIO communicated with the EOC and the State PIO by commercial telephone. News release hard copy, transmitted to the county EOC by the State PIO over the computer system, was available.

X. Recovery and Reentry

Recovery and reentry capability was not demonstrated.

York County EAC, Tabb High School

I. Activation and Staffing

The organizations represented at the Tabb High School EAC were: York County Social Services, Red Cross, Health Department, Fire Department and Police Department. The staff was alerted by the EAC manager by telephone and were assembled within one hour. The staff size was adequate, and the staff members demonstrated adequate capability. The EAC manager was unable to demonstrate 24-hour staffing capability. This capability should be established and demonstrated in future exercises.

II. Registration and Monitoring of Evacuees

Eight evacuees from the nearby military installation were properly registered by EAC staff after being checked for radiological contamination by two monitoring personnel.

All people, vehicles and equipment were properly checked for radiological contamination initially as they arrived at the school parking lot and then again as they entered the school building. The EAC manager demonstrated the decontamination procedures that would be used, including showers, paper runners on the floor, disposition of

contaminated clothing, and the provision of fresh clothing. Contaminated clothes, etc. would be placed in containers and then removed from the site. No special precautions were taken in disposing of contaminated washwater.

III. Congregate Care of Evacuees

The relocation center was located more than 5 miles beyond the plume EPZ and could accommodate approximately 500 persons. Excess evacuees would be sent to Poquoson High School. Adequate food supplies were immediately available from the school cafeteria and within 24-hours from the York High School food storage area. Communication was available to the local EOC and emergency medical facilities by commercial phone and RACES radio and police/fire radio. Shelter personnel were aware of the number of evacuees expected to arrive.

York County Field Monitoring Teams

I. Field Monitoring Mobilization

Field team notification and mobilization were accomplished promptly and without problem. After arrival at the York County EOC, the Radiological Officer began to activate the three field monitoring teams. Notification took about 15 minutes, using a written call list. The first monitoring team members to arrive at the EOC began to check and prepare dosimeters and GM counters. The first monitoring team was ready to go within 45 minutes of having first been contacted by the Radiological Officer. Each team consisted of a RACES operator and GM counter operator. They were briefed on plant conditions, equipment checks, exposure control procedures and work roles, but were not briefed on meteorological conditions.

II. Field Team Equipment

In keeping with the role of the York County EOC field monitoring team, equipment was limited to a GM counter. The team vehicle was an automobile, which was adequate considering that all monitoring points were accessible by paved roads.

III. Field Team Technical Operations

The field teams demonstrated the capability to perform technical operations correctly. Team members activated and checked the operation of their equipment before going into the field. The GM counters were operated correctly and written SOPs were followed. The teams had maps and were familiar with the area.

IV. Field Team Communications

Communication between the monitoring teams in the field and the York County EOC were provided by RACES. A few dead spots occur within the EPZ, but the field RACES operator could compensate by moving to higher ground before transmitting readings. Backup communication systems were available by a portable hand-held radio and a backup emergency RACES station.

V. Field Team Exposure Control

York County field monitoring teams were equipped with low range dosimeters and TLDs. The field teams were apparently not well versed on how often to read dosimeters, maximum allowable doses, what to do if an excess dose was received, and/or procedures for KI. Additional training should be provided to the field team members.

York County Deficiencies/Recommendations

1. The York County Commissioners were not present and actively involved in decision making during the exercise. It is recommended that county officials participate in future exercises.
2. The county's present school policy, which was demonstrated, allows for the early closure of schools and the return of students residing within the 10-mile EPZ to their homes, if the event is determined to be slow-breaking. To provide maximum protection for the students, it is recommended that this policy be reconsidered in favor of a policy which designates that students attending EPZ schools, and students residing within the EPZ, be evacuated to designated host sites regardless of whether the event is judged to be slow or fast-breaking.
3. As demonstrated during the exercise, the present plans for evacuating the York Naval Weapons Station call for sending all 2,500 personnel to the York County Evacuation Assembly Center. To alleviate the resulting burden that would be placed upon the facilities available to the county for monitoring and sheltering evacuees, it is recommended that county officials require all at-risk military facilities within their jurisdiction to arrange for non-civilian host sites.
4. York County did not have high-range (0-200R) dosimeters, for distribution to field emergency workers, as required by the plan. A sufficient quantity of high-range dosimeters should be obtained and predistributed to the county EOC.
5. York County radiological field team members were not sufficiently familiar with all aspects of radiological exposure control. Field team personnel should be provided additional training in this area.
6. The capability for 24-hour staffing capability at the York County EAC was not demonstrated. This capability should be established and demonstrated in future exercises.

City of Poquoson EAC, Poquoson High School

I. Activation and Staffing

The organizations represented at the Poquoson High School EAC were: Red Cross, County Health, police and fire. They provided messing, nursing, medical and police support. The staff were all alerted by telephone from a notification list and were mobilized within approximately 15 minutes. The staff were fully adequate in number, background and training to perform their emergency functions. In fact they were highly professional in demonstrating their duties. Twenty-four hour staffing capability was demonstrated by the EAC manager with the presentation of a duty assignment roster.

II. Registration and Monitoring of Evacuees

Procedures were adequately demonstrated for registering the evacuees using registration forms. In that the City of Poquoson provides EAC assistance in support to York County in the event that York County EACs are filled to capacity, evacuees arriving at this center are supposed to have been subjected to monitoring and decontamination at Tabb High School. As a precaution, however, a radiological monitoring team performed a recheck of personnel as they entered the EAC. Any evacuees found to be contaminated would be returned to Tabb High School for decontamination.

III. Congregate Care of Evacuees

The relocation center was located more than five miles beyond the plume EPZ and could accommodate 220 people. If shelter capacity were exceeded, the York County EOC would be contacted. Food supplies were immediately available from the school cafeteria, and within 24 hours from a local supermarket. Communication was available with the local EOC and emergency medical facilities via commercial telephone, fire and police radio. Shelter personnel were aware of the number of evacuees expected to arrive.

SUMMARY OF INADEQUACIES
Explanation of Categories

The inadequacies listed under the Deficiencies/Recommendations heading for each evaluated location or activity have been summarized and classified according to the following three categories:

Deficiencies are demonstrated and observed inadequacies that cause a finding that offsite emergency preparedness was not adequate to provide reasonable assurance that appropriate protective measures can be taken to protect the health and safety of the public living in the vicinity of Surry Power Station in the event of a radiological emergency. Because of the potential impact of deficiencies on emergency preparedness, they are required to be promptly corrected through appropriate remedial actions including remedial exercises, drills or other actions.

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

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

SUMMARY OF DEFICIENCIES

Recommendation	Reference NUREG-0654 Part II	Correction	Proj'd Date	Actual Date
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No deficiencies were observed during this full-scale exercise which cause a finding that offsite emergency preparedness was not adequate to provide reasonable assurance that protective measures can be taken to protect the health and safety of the public living in the vicinity of the Surry Power Station in the event of a radiological emergency.

AREAS REQUIRING CORRECTIVE ACTION

Recommendation	Reference NUREG-0654 Part II	Correction	Proj'd Date	Actual Date
<u>Commonwealth of Virginia EOC</u>				
1. The final protective action recommendation affecting three sectors out to twenty miles was administratively withdrawn from exercise play and therefore not realistically resolved within exercise play. Future exercises should demonstrate complete participation by all exercise players to effect resolution of population protection issues.	N.3.	Emergency Planners and operations personnel from Virginia Power and the Dept. of Emerg. Servs. (DES) will ensure that future exercise scenarios are cleared with key controllers prior to being released to exercise participants.	A meeting of utility and DES representatives was held on October 31, 1985 to discuss all aspects of the exercise including the need for complete participation by exercise players.	
2. The State Radiological Health and Department of Emergency Services personnel should make every effort to forward recommended protective actions to local affected jurisdictions and local field readings to the EOF as rapidly as possibly achievable.	J.9.	Efforts will continue to be made to maximize the use of Surry Power Station Computer Network, Virginia Criminal Information Network, and other hand-copy and voice networks to transmit this data.	Immediately	
3. In order to effectively demonstrate and allow observation of the public notification systems, it is recommended that future exercises demonstrate actual activation of these systems.	E.6, E.7	Actual activation of the Emergency Broadcast System (EBS) in conjunction with the Early Warning (Sirens) System is planned for future exercises.	Immediately.	

AREAS REQUIRING CORRECTIVE ACTION

Recommendation	Reference NUREG-0654 Part II	Correction	Proj'd Date	Actual Date
4. The State should ensure that all affected locations receive notification to administer KI to emergency workers when recommended by the Bureau of Radiological Health.	D.4.	All exercise participants will be urged to follow their plans as pertain to this matter. Also, training will be offered as necessary.	February 1986	
5. The State should ensure that all affected locations receive notification regarding ingestion pathway protective action decisions.	D.4.	This action is normally simulated. However, State EOC procedures for notifying ingestion pathway jurisdictions will be reviewed.	February 1986	
6. The Surry ring-down communication system should be reviewed and necessary corrections made to this system to ensure operability during emergency response operations and to ensure rapid transmittal of field data to the EOF.	F.1.d.	The ARD system will be reviewed for correct operability.	Immediately	

Emergency Operations Facility

7. The communications network at the EOF, to include an effective backup system, should be made operable to enable rapid and efficient contact with field monitoring teams and the State EOC.	F.1.d.	A new radio network will be installed in the Surry EOF to facilitate improved communications between the BRH Radiological Assessment Officer and State-local field monitoring teams in the field. Also, a backup radio system will be available.	January 31, 1986	
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AREAS REQUIRING CORRECTIVE ACTION

Recommendation	Reference NUREG-0654 Part II	Correction	Proj'd Date	Actual Date
8. Future exercises should protect the scenario information from premature release to exercise participants in the EOF.	N.1.a.	Exercise scenarios and significant events of play will continue to be closely guarded to as not to preempt the full impact of responsible actions by participants.	Immediately	
9. Radiological monitoring field teams should be instructed to periodically report their dosimeter readings to the EOF, either via primary or secondary communications systems.	K.3.a., K.3.b.	Refresher training will be provided to radiological monitoring field teams.	February 1986	
10. Dose assessment personnel at the EOF should maintain active participation with offsite authorities in the exercise until all protective action decisions are satisfactorily resolved.	N.3.	The BRH Radiological Assessment Officer in the EOF will continue to coordinate with utility health physicists and provide appropriate recommendations to the State EOC.	Immediately	
<u>Field Monitoring Teams</u>				
11. Field team members should take the necessary steps to assure that their field readings are accurately transmitted to the EOF.	F.1.d.	Radiological training classes will be made available to all radiological officers and RM's.	February 1986	
12. Monitoring teams should be outfitted with a complete complement of field equipment, as identified on their checklists, and training in the use of this equipment should be provided to all designated monitors.	0.4.c.	An assessment of available and appropriate RM equipment will be made and training classes will be offered to all RO's and RM's.	February 1986	

AREAS REQUIRING CORRECTIVE ACTION

Recommendation	Reference NUREG-0654 Part II	Correction	Proj'd Date	Actual Date
13. Maps provided to radiological monitoring teams should be revised to identify each monitoring location with a separate and individual numeral.	J.10.a.	The Bureau of Radiological Health will review monitoring locations for State and local teams and revise maps as necessary.	March 1986	
14. All monitoring team members should be provided with TLDs.	K.3.3.	TLD use will be included in RM training.	February 1986	
15. Equipment should be calibrated on a yearly basis.	H.10.	State policy is biennial calibration of equipment.	Immediately	

Field Sampling Teams

16. Field sampling team members should be issued record keeping cards and KI and receive training concerning decontamination procedures and location of these facilities. It is noted that this deficiency was also reported during the last full-scale exercise.	K.3.a.	Training will be offered to appropriate State agencies. KI will not be issued but will be available to team members. Nearly all EAC's have decontamination facilities.	March 1986	
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Medical Support

17. Radio communications at the Medical College of Virginia should be reviewed and necessary steps taken to ensure the use of this capability.	F.2.	Radio communications at MCV will be reviewed and appropriate actions will be taken.	February 1986	
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AREAS REQUIRING CORRECTIVE ACTION

Recommendation	Reference NUREG-0654 Part II	Correction	Proj'd Date	Actual Date
18. Future exercises should include the actual demonstration of medical treatment to a contaminated injured patient. It is noted that this activity was included within the scenario submitted by the Commonwealth.	N.1.	DES will discuss this aspect of play with MCV to insure that appropriate response actions during exercises are demonstrated.	February 1986	
<u>Traffic and Access Control</u>				
19. Future exercises should demonstrate the manning of all traffic control points as designated in the exercise scenario.	J.10.j.	Managing of traffic control points will be performed as per exercise scenario.	April 1986	
20. The municipal police should ensure that all individuals stationed at traffic control points are provided with adequate radiological protective equipment and instructed as to the location of monitoring/decontamination facilities for the general public.	K.3.a.	The State Police elected to place some troopers in the Surry area in a training mode to observe their counterparts. These persons did not have all of the radiological protective equipment normally issued to State Police officers. Radiological training will continue to be offered.	February-March 1986	
21. The State and/or local jurisdictions should assume the responsibility for the control of access into areas evacuated due to expanded protective action decisions.	J.10.j.	This element will be reemphasized to local emergency services coordinators and appropriate response actions will be demonstrated in a future exercise.	February 1986	

AREAS REQUIRING CORRECTIVE ACTION

Recommendation	Reference NUREG-0654 Part II	Correction	Proj'd Date	Actual Date
<u>Isle of Wight</u>				
22. A bus was dispatched into the EPZ to pick up eleven students who reportedly had been dropped off earlier. This decision in a real situation would have caused undue exposure to the bus driver. It would have been more prudent to send trained search and rescue personnel to locate students prior to dispatching the bus since the exact location of the students was not known.	J.10.c., J.10.d.	Exercise scenarios are designed to provide various and peculiar situations for response organizations. This is an important element of training. Additional table-top exercises will be offered for this jurisdiction.	October 1986	
23. Survey meters should be checked for calibration dates. The last date on the instruments in the EOC was 1983.	H.10.	The State policy is to calibrate equipment on a biennial basis.	Immediately	
<u>James City County</u>				
24. It is recommended that the County Department of Emergency Services, in future exercises, attempt to avoid pre-positioning in order to more realistically test the ability to activate the EOC.	E.2.	Each aspect of a given exercise will be considered in view of the training expected and exercise objectives.	March 1986	

AREAS REQUIRING CORRECTIVE ACTION

Recommendation	Reference NUREG-0654 Part II	Correction	Proj'd Date	Actual Date
25. It is recommended that the County evaluate the number and location of EOC telephones in anticipation of a probable high volume of communications traffic during emergency operations.	F.1.	Communications requirements for this county's EOC are being reviewed.	Immediately	
26. There was a 23 minute delay in the Charles City County receiving notice of General Emergency. James City and Charles City Council Emergency Services Coordinators should attempt to determine the cause of this delay in order to prevent similar occurrences in the future.	F.1.b.	Emergency services coordinators in both James City and Charles City counties are aware of the delay in receipt of notification and are considering various solutions for making the notification more timely.	Immediately	
<u>Surry County</u>				
27. The current EOC has had longstanding identified limitations with regard to adequate space, furniture and telephones. The county should continue its current plans in the construction of its new emergency operations facility, with a scheduled target completion date of January 1986.	H.3.	The Surry County EOC will occupy an inner office in the new administration building.	June-July 1986	

AREAS REQUIRING CORRECTIVE ACTION

Recommendation	Reference NUREG-0654 Part II	Correction	Proj'd Date	Actual Date
28. It is recommended that emergency backup power be provided to the EAC, and that a resource for the provision of adequate cots be established should extended mass care operations be necessary.	H.3.	This recommendation is being considered. Backup power is needed for both the EOC and EAC. Cots will be available through the State EOC.	Immediately	
29. The Surry County RERP should be updated to reflect changes to identified response personnel.	A.4.	The County's RERP will be reviewed and updated as necessary.	July 1986	
<u>City of Williamsburg</u>				
30. The evacuation of mobility-impaired individuals needs to be better coordinated. The plan (1-3) states that it is the responsibility of the Department of Social Services to identify those individuals who require special transportation for evacuation. The department was aware of only one individual. The Fire Chief had a more comprehensive list, but the EMC was not aware of the existence of this list. It is suggested that one department be given the responsibility for maintaining a list of mobility-impaired requiring transportation and in future exercises at least simulated arrangements should be made for their evacuation.	J.10.d.	The Department of Social Services will compile and maintain a complete list of individuals with special needs.	Immediately	

AREAS REQUIRING CORRECTIVE ACTION

Recommendation	Reference NUREG-0654 Part II	Correction	Proj'd Date	Actual Date
31. Field monitoring equipment needs to be re-calibrated. In some cases it has not been calibrated since 1981.	H.10.	All custodians will be asked to bring this equipment to the attention of the maintenance and calibration specialist.	Immediately	
32. City police manning traffic control points were not issued dosimetry. Exercises should be used to allow police personnel to become familiar with this specialized equipment and the reporting procedures.	K.3.a., O.4.d.	This was our obvious oversight. City police who man traffic control points will be offered training in this area and issued protective equipment in future exercises.	March 1986	
33. The responders should be cognizant that they are responding to a simulated emergency and act accordingly. An inserted message from the controller to the PIO from a citizen said he heard a rumor that the sirens had sounded but he did not hear the siren near his house, and that the siren is always noticeable during tests. The PIO's response was that this is an exercise and that sirens were only simulated. The EMC's response was essentially the same, adding that he had received a message that the sirens had been activated (simulated). The proper response would be to explore instituting route alerting in the area where the siren was not heard, suspecting possible siren failure.	N.1.b.	Training will be offered to all organizations, responders and support groups. Special emphasis will be placed on coordination between elements simulations versus actual demonstrations.	October 1986	

AREAS REQUIRING CORRECTIVE ACTION

Recommendation	Reference NUREG-0654 Part II	Correction	Proj'd Date	Actual Date
34. The plans for radiological exposure control and the equipment to be utilized by emergency workers do not mesh well. To require an individual to report his readings everytime his CDV-138 goes off-scale and yet potentially allow him to absorb 25 Rems is a very cumbersome process in that repeated calibration of the dosimeter would be necessary, and accurate exposure control difficult.	K.3.	This recommendation will be considered. However, the current procedure appears to be the most appropriate for insuring that workers are not overly exposed as well as to insure that accurate data is provided to the local EOC and EOF.	Immediately	
35. The field monitoring team did not know at what value of exposure authorization was needed to remain in the plume. The teams should receive further training in procedures for authorization to exceed doses stipulated in the plan.	K.4. 0.4.c.	Radiological monitor training will be offered to radiological monitoring teams. New members will be urged to attend.	February 1986	
<u>New Kent County</u>				
36. Monitors assigned to monitoring functions at the Evacuation Assembly Center should be provided a refresher course in proper radiological monitoring procedures.	0.4.	Radiological monitor training will be offered at convenient locations for RM's.	February-March 1986	

AREAS REQUIRING CORRECTIVE ACTION

Recommendation	Reference NUREG-0654 Part II	Correction	Proj'd Date	Actual Date
<u>York County</u>				
37. York County did not have high-range (0-200R) dosimeters, for distribution to field emergency workers, as required by the plan. A sufficient quantity of high-range dosimeters should be obtained and predistributed to the county EOC.	K.3.a.	DES has a considerable supply of high-range dosimeters. These will be made available to York County upon request.	Immediately	
38. York County radiological field team members were not sufficiently familiar with all aspects of radiological exposure control. Field team personnel should be provided additional training in this area.	K.3.a., 0.4.c.	A schedule of Radiological monitor classes will be coordinated with the emergency services coordinator. Radiological monitors will be urged to attend these courses.	March 1986	

AREAS RECOMMENDED FOR IMPROVEMENT

Recommendation	Reference NUREG-0654 Part II	Correction	Proj'd Date	Actual Date
<u>Commonwealth of Virginia EOC</u>				
1. Existing requirements for transportation assistance to established facilities, i.e., the Eastern State Hospital should be assessed and incorporated, if necessary, within Emergency Operations Plans.	J.10.d.	Eastern State Hospital should address transportation requirements in its implementing procedures. DES, through the State EOC, will coordinate the provision of resources during an emergency.	Immediately	
<u>Isle of Wight</u>				
2. More formal briefings should be scheduled on an hourly basis where the Coordinator can receive a verbal update on actions taken by his response organization.	F.1.	This recommendation will be considered.	Immediately	
3. A standard message form should be devised and used by all staff members to include EAC staff and RACES operators. All organizations should also keep logs of actions taken. The message log form should be used for this purpose.	F.1.	A standard message form (NCR paper) is being considered for use.	Immediately	

AREAS RECOMMENDED FOR IMPROVEMENT

Recommendation	Reference NUREG-0654 Part II	Correction	Proj'd Date	Actual Date
4. An additional clerical person should be recruited and trained in the proper use of the status board. This will relieve the message clerk who was extremely busy during the exercise.	F.1.	This recommendation will be considered by the emergency services coordinator.	Immediately	
5. It is recommended that a blow-up map of the Isle of Wight County be obtained and evacuation routes, relocation centers, traffic control points and radiological monitoring points posted so that they are visible to all staff in the EOC.	J.10.a.	Maps are available and will be provided to Isle of Wight County upon request.	Immediately	
6. Isle of Wight County should look into the possibility of getting an HF dipole and two meter antenna permanently installed for RACES use. This would be of great help to out-of-town RACES personnel who are unfamiliar with available facilities.	F.1.	This recommendation will be discussed with the RACES State coordinator and the county emergency services coordinator.	January 1986	

AREAS RECOMMENDED FOR IMPROVEMENT

Recommendation	Reference NUREG-0654 Part II	Correction	Proj'd Date	Actual Date
7. All radiological equipment to be issued to emergency workers should be organized into readily accessible kits to include dosimeters, TLDs, KI, chargers and extra batteries, and record keeping forms. Emergency workers should report to a central location at a specific time to pick up their kits and to receive instructions on the use of the kits.	K.3.a.	This recommendation is currently being implemented.	Immediately	
8. In future exercises monitoring and decontamination procedures should be demonstrated.	N.1.b.	Monitoring and decontamination procedures will be demonstrated during the next biennial exercise.	Fall 1987	
<u>James City County</u>				
9. A status board should be maintained in the EOC listing significant actions and events.		This recommendation is being considered by the local emergency services coordinator.	Immediately	
<u>Newport News</u>				
10. Future scenarios should generate sufficient activity to provide for the demonstration of protective actions by this jurisdiction.	N.1.b.	Exercise scenarios are designed to test all or specific elements and aspects of each local government's emergency response organization.	---	

AREAS RECOMMENDED FOR IMPROVEMENT

Recommendation	Reference NUREG-0654 Part II	Correction	Proj'd Date	Actual Date
<u>City of Williamsburg</u>				
<p>11. Public information in general was weak basically due to the fact that there was little up-to-date information available to the PIO. This was partly due to the PIO being located in the lobby of police headquarters, isolated from the EOC. The Coordinator did not provide the PIO with status updates, but the PIO was unable to follow the City's response on a continuous basis. The suggestion of the EMC that the PIO be located in the EOC and to utilize the lobby only for media briefings would be an improvement.</p>	G.4.a.	<p>The PIO should ensure that news reporters are briefed in a location outside of the local EOC. Also, the PIO should avail him/herself of current information by frequent visits to the EOC.</p>	---	
<p>12. It is recommended that the EOC staff brief the EMC periodically in a group setting so that all individuals will have a clear understanding of the City's overall response.</p>	F.1.	<p>The Emergency Services Coordinator should conduct periodic briefings in the EOC. Service chiefs should update the coordinator on significant field operations.</p>	---	

AREAS RECOMMENDED FOR IMPROVEMENT

Recommendation	Reference NUREG-0654 Part II	Correction	Proj'd Date	Actual Date
<u>York County</u>				
13. The York County Commissioners were not present and actively involved in decision-making during the exercise. It is recommended that county officials participate in future exercises.	E.2.	Members of the York County Board of Supervisors could not each attend. Stronger participation by the Board in future exercises is being encouraged.	Immediately	
14. The county's present school policy, which was demonstrated, allows for the early closure of schools and the return of students residing within the 10-mile EPZ to their homes, if the event is determined to be slow-breaking. To provide maximum protection for the students, it is recommended that this policy be re-considered in favor of a policy which designates that students attending EPZ schools, and students residing within the EPZ, be evacuated to designated host sites regardless of whether the event is judged to be slow or fast-breaking.	A.1.b., J.12.	This recommendation is being considered by the School Superintendent. Additional study will be made on this proposal.	Immediately	

AREAS RECOMMENDED FOR IMPROVEMENT

Recommendation	Reference NUREG-0654 Part II	Correction	Proj'd Date	Actual Date
<p>15. As demonstrated during the exercise, the present plans for evacuating the York Naval Weapons Station call for sending all 2,500 personnel to the York County Evacuation Assembly Center. To alleviate the resulting burden that would be placed upon the facilities available to the county for monitoring and sheltering evacuees, it is recommended that county officials require all at-risk military facilities within their jurisdiction to arrange for non-civilian host sites.</p>	<p>A.1.b., J.12.</p>	<p>We are aware of the concerns as discussed during the exercise of all Naval Weapons Station personnel to the County EAC. This recommendation will require additional planning and meetings with the Naval Weapons Station emergency service personnel to make adequate changes in their plans for arrangements with neighboring military installations to provide sheltering for Naval Weapons personnel during emergencies.</p>	<p>---</p>	
<p>16. The capability for 24-hour staffing capability at the York County EAC was not demonstrated. This capability should be established and demonstrated in future exercises.</p>	<p>J.12, K.3.a.</p>	<p>Although it was not demonstrated during the exercise, York County does have 24-hour staffing capability and was in fact practiced during the recent Hurricane Gloria storm affecting the Virginia coastline.</p>	<p>---</p>	