

Official

MAY 28 1985

Virginia Electric and Power Company
ATTN: Mr. W. L. Stewart, Vice President
Nuclear Operations
P. O. Box 26666
Richmond, VA 23261

Gentlemen:

SUBJECT: FEMA FINAL REPORT - NORTH ANNA NUCLEAR POWER PLANT EMERGENCY
EXERCISE OF NOVEMBER 15, 1984

Enclosed is a copy of correspondence received from FEMA forwarding their evaluation of offsite emergency preparedness for the North Anna exercise which was conducted on November 15, 1984. As described in the enclosure, FEMA has identified an apparent offsite deficiency that needs to be resolved.

We understand that the identified item may have already been resolved or is in the process of being resolved. We encourage your continued assistance to the Commonwealth of Virginia and Louisa County to correct the deficiency noted by FEMA before the next full scale exercise. At that time, all pertinent areas will be re-evaluated, and the results used by the NRC in any decisions pertaining to the adequacy of the state of emergency preparedness at the North Anna site.

We also encourage you to work closely with the State and counties in the development of a scenario for the next full scale exercise that will test as many of the areas as practical in which the previously identified deficiencies were found.

Your cooperation in this matter is appreciated.

Sincerely,

Viril L. Brownlee, Chief
Reactor Projects Branch 2
Division of Reactor Projects

Enclosure:
Memorandum from R. W. Krimm to
E. L. Jordan, dated May 1, 1985,
with attachment

cc w/encl:
J. I. Oatts, Chief Operating Officer
W. S. Mistr, Manager - Security
E. H. Harrell, Station Manager

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bcc: NRC Resident Inspector
Document Control Desk
Commonwealth of Virginia

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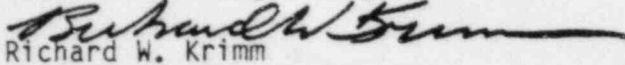


Federal Emergency Management Agency

Washington, D.C. 20472

MAY 1 1985

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
Assistant Associate Director
Office of Natural and Technological
Hazards Programs

SUBJECT: Exercise Evaluation Report on the Offsite Radiological
Emergency Preparedness Exercise at the North Anna Power Station

Attached are two copies of the Exercise Evaluation Report for the November 15, 1984, exercise of the offsite radiological emergency preparedness plans for the North Anna Power Station. The exercise report dated January 18, 1985, was prepared by the Region III staff of the Federal Emergency Management Agency. Also attached is a copy of the corrective action schedule submitted by the Commonwealth of Virginia.

The exercise report cites a Category A deficiency for Louisa County which resulted from the failure of the Louisa County Acting Coordinator of Emergency Services to contact the State Emergency Operations Center (EOC) for clarification of the Governor's evacuation order, thus, resulting in a 35-minute delay in implementing the protective action. The confusion resulted from differences in the onsite and offsite scenarios during the General Emergency phase of the exercise, which caused Louisa County Officials to reach an inappropriate decision on implementing the protective action. Exercise participants had agreed during exercise design to run a separate onsite and offsite scenario during part of the exercise in order to generate evacuation actions in all jurisdictions. However, for a period of time Louisa County continued to play on the basis of the onsite scenario. Thus, the noted Category A deficiency was artificially created by the scenarios and exercise control failures. A remedial exercise will not be required for the Category A deficiency since the Commonwealth of Virginia and Louisa County have committed to proper coordination in the future which should alleviate confusion in implementing protective action recommendations.

In light of the schedule of corrective actions submitted for the Category A and B deficiencies, there is reasonable assurance that appropriate protective measures can be implemented by offsite authorities in the event of an accident at the North Anna Power Station. Therefore, the 44 CFR 350 approval granted by FEMA on February 23, 1983, will remain in effect.

If you have any questions, please contact Mr. Robert S. Wilkerson, Chief, Technological Hazards Division, at 646-2861.

Attachment
As Stated

2505/3268
24 pp.



Federal Emergency Management Agency

Region III 105 South 7th Street Philadelphia, Pennsylvania 19106

February 11, 1985

MEMORANDUM FOR: Robert S. Wilkerson, Chief
Technological Hazards Division

ATTENTION: Gloria Joyner

FROM: James R. Asher, Chairman
Regional Assistance Committee

James R. Asher

SUBJECT: North Anna Exercise Corrective Actions

Enclosed for your information is a copy of the follow-up response, as provided by the Commonwealth of Virginia, in clarifying proposed and completed corrective actions for deficiencies/recommendations identified during the North Anna Power Station REP Exercise conducted on November 15, 1984.

Attachment



COMMONWEALTH of VIRGINIA

A. E. SLAYTON, JR.
Acting State Coordinator

Department of Emergency Services

February 4, 1985

310 Turner Road
Richmond, Virginia 23225-6491
(804) 323-2899

Mr. James R. Asher
Chairman, Regional Assistance Committee
Federal Emergency Management Agency
Region III
Sixth and Walnut Streets
Philadelphia, Pennsylvania 19106

Dear Mr. Asher:

This is in reply to your letter dated January 21 concerning our comments on the North Anna Power Station Exercise Report. We provide the following statements to clarify our previous response.

Item 12

On January 3, 1985, the State Department of Emergency Services initiated a telephone conversation with the Caroline County Coordinator of Emergency Services concerning exercise deficiencies and proposed corrective actions. The Coordinator agreed, on this date, to seek information from the State EOC on ingestion pathway protective actions in the absence of information being made available from the State. As regards this item, the State Deputy Director of Operations in the State EOC has agreed to cause on-going status reports of emergency/exercise activities to be provided to local governments in the plume and ingestion exposure pathways.

This corrective action has already been taken.
Date: January 3, 1985.

Item 26

Spotsylvania County has agreed to clearly demonstrate route alerting and route alerting procedures during future exercises and to assure that the assigned federal representative observes this action.

This corrective action was discussed and agreed to on January 2, 1985.

The following is the revised projected dates for completion of the noted corrective actions:

Category A

Item 1 - December 1984 - January 1985

Category B

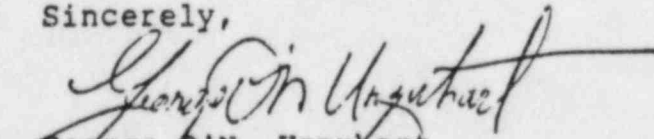
- Item 1 - January 1985.
- Item 2 - In process.
- Item 3 - Under discussion; October 1985.
- Item 4 - On-going training being provided.
- Item 5 - On-going training being provided.
- Item 6 - On-going training being provided.
- Item 7 - Under discussion; meeting held January 1985.
- Item 8 - In process; October 1985.
- Item 9 - On-going training being provided;
recordkeeping cards/sheets emphasized.
- Item 10 - Under discussion; meeting held December 1984.
- Item 11 - Discussed and agreed. January 8, 1985.
- Item 12 - See statement above.
- Item 13 - Action taken; January 1985.
- Item 14 - Discussed; January 1985.
- Item 15 - Discussed; January 1985.
- Item 16 - Discussed; January 1985; plans being developed.
- Item 17 - Discussed; January 1985; prescribed message
format being developed.
- Item 18 - On-going training being provided; January 1985.
- Item 19 - On-going training being provided; January 1985.
- Item 20 - On-going training being provided; January 1985.
- Item 21 - In process; prescribed message format
being developed.
- Item 22 - Discussed and agreed; December 1984.
- Item 23 - Under discussion; installation scheduled
for June 1985.
- Item 24 - Discussed; January 1985.
- Item 25 - On-going training being provided.
- Item 26 - See statement above.
- Item 27 - Discussed; December 1984; revised plans
being developed.
- Item 28 - Discussed; December 1984; plans in place.
- Item 29 - Training in progress; January 1985.
- Item 30 - Discussed; January 1985; staff currently
reviewing procedures.
- Item 31 - Refresher training provided December 1984;
monthly tests of the computer network to
include hardcopy transmission of information
is being scheduled with local governments.

Mr. James R. Asher
Page Three
February 4, 1985

- Item 32 - Discussed at a January 1985 training session; on-going training for field deployment is being provided.
- Item 33 - Discussed; January 1985.
- Item 34 - Discussed; December 1984; new location under study.
- Item 35 - Discussed; January 1985; Coordinator has made provision to effectively employ status board in exercises and/or emergencies.
- Item 36 - Antennae cable work has been scheduled; January 1985.
- Item 37 - Discussed; January 1985; plans underway to accommodate press representatives in Hanover media briefing room.
- Item 38 - Corrective action will be discussed with local government officials and other principal parties at a meeting scheduled for February 1985.
- Item 39 - The North Anna Computer Network, as of January 1985, is in place, operational, and has been tested; will be used to provide the exchange of hardcopy news releases.
- Item 40 - Discussed; December 1984.. County currently making provision to utilize a status board in the EOC.
- Item 41 - Orange County has requisitioned appropriate communications links to be installed between the two facilities; January 1985.
- Item 42 - This item was discussed at a December 1984 meeting; arrangements have been made to relocate message center.
- Item 43 - Discussed at the December 1984 meeting; message logs were reviewed for deletion of non-essential information; new procedures being discussed with message journal clerks.
- Item 44 - On-going training will be provided to all EOC and EAC personnel; discussed and scheduled at the December 1984 meeting.

Should you have any questions concerning this subject or any of the above information, please feel free to call me.

Sincerely,


George O'N. Urquhart
Chief, Radiological Planning Branch

GCT/nas



Federal Emergency Management Agency
REGION III

January 21, 1985

Mr. George Urquhart
Department of Emergency Services
310 Turner Road
Richmond, Virginia 23225

Dear Mr. Urquhart:

This is to formally acknowledge receipt of your written response to the North Anna Power Station Exercise Evaluation Report for the Radiological Emergency Preparedness Exercise conducted on November 15, 1984.

The proposed corrective actions and projected completion dates for each of the listed deficiencies and recommendations have been reviewed and, in general, appear to satisfactorily resolve the identified concerns.

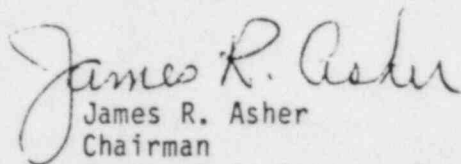
In addition, due to the nature of the Category A deficiency identified in Louisa County, and with the understanding that subsequent contact with Louisa County officials has indicated that in the future the County will respond to protective action directions received from the State in a timely manner, it has been determined that a remedial exercise or drill will not be necessary in order to correct this deficiency. However, your assistance in clarifying the following concerns is requested.

1. The proposed corrective action for the Category B deficiency numbered 12 does not indicate definitive actions to be taken to avoid the recurrence of this deficiency in future exercises.
2. Although it is reported under Corrective Action numbered 26 that route alerting procedures were demonstrated by Spotsylvania County, the federal observer's report of activities and exercise logs and message forms do not indicate the dispatch of, contact with, or completion of route alerting activities. It is recommended that the next full-scale exercise scenario for jurisdictions surrounding the North Anna Power Station ensures the completion of route alerting procedures in Spotsylvania County to permit the focused federal observation of the activation.

3. In general, the projected dates for all of the corrective actions should be reviewed so as to indicate the date of projected completion of each activity, and revised as necessary.

Your continued assistance and cooperation in resolving the recommendations and deficiencies raised during this exercise are appreciated. Please provide your response to the above listed items to my attention at your earliest convenience, but not later than February 15, 1985.

Sincerely,

A handwritten signature in cursive script that reads "James R. Asher". The signature is written in dark ink and is positioned above the printed name and title.

James R. Asher
Chairman
Regional Assistance Committee



COMMONWEALTH of VIRGINIA

Department of Emergency Services

A. E. SLAYTON, JR.
Acting State Coordinator

310 Turner Road
Richmond, Virginia 23225-6491
(804) 323-2899

January 7, 1985

Mr. James R. Asher
Chairman, Regional Assistance Committee
Federal Emergency Management Agency
Region III
Sixth and Walnut Streets
Philadelphia, Pennsylvania 19106

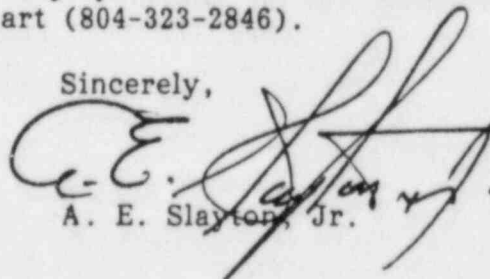
Dear Jim:

This is in reply to your letter dated December 18, 1984, which transmitted the Exercise Evaluation Report (draft) for the North Anna Radiological Emergency Preparedness Exercise conducted on November 15, 1984.

We have reviewed the interim report and, with few exceptions, accept its recommendations. Copies of the report were distributed to major exercise participants who were invited to comment on their respective elements. A consolidated response of comments and a schedule of corrective actions to identified deficiencies/recommendations is attached.

Should you have any questions on this submittal, please contact George Urquhart (804-323-2846).

Sincerely,



A. E. Slayton, Jr.

AESjr/GOU/nas

Attachment

cc: NAPS Area Local Governments
M. M. Cline
C. C. Sawtelle, Jr.
J. L. Tribble

Attachment

The following sheets list the numbered deficiencies/recomendations contained in Pages 47-61 of the NAPS draft Exercise Evaluation Report and State corrective comments and projected date of response.

SUMMARY OF CATEGORY "A" DEFICIENCY

Deficiency/Recommendation

Reference
NUREG-0654
Part II

Correction

Proj'd
Date

Louisa County

1. After receiving the Governor's evacuation directive, which EOC staff perceived to be inappropriate, County officials failed to contact the State EOC for clarification, resulting in a thirty-five minute delay in implementing the protective action. In order to assure a coordinated response, thus minimizing public confusion, County officials should contact the State EOC promptly regarding questions on directions or instructions, and protective actions should be completed on a timely basis.

J.9

1. The Louisa County Acting Coordinator of Emergency Services and his Deputy, upon receiving the Governor's evacuation directive, proceeded to discuss this proclamation with members of the local governing body, and with other emergency services personnel. This directive was also discussed with the State's Acting Regional Coordinator. The point of discussion: How was it possible for areas in Louisa County to be affected by the radiological incident at the NAPS when, up to the time of the order, reports from the power station consistently showed wind and plume pathway to be away from Louisa? Emergency services coordinators in adjacent jurisdictions were also called to discuss this matter. It was soon discovered by Louisa that all other jurisdictions within the ten-mile EPZ were directing evacuation in accordance with the directive from the State EOC. As soon as these reports were received, Louisa County officials immediately ordered evacuation for the "affected" portions of the County.

May '86*

The major cause of the delay in implementing the directive was that the NAPS technical scenario and the scenario for off-site authorities, which called for evacuation out to ten miles in all directions differed during the General Emergency Phase. The dual scenario was required to cause sufficient plan implementation and maximum participation in all jurisdictions, regardless of wind direction and other plant-generated data.

In the future, jurisdictions will implement protective actions based on the exercise scenario, State directives or best available information. Also, every effort will be made to ensure that any confusion caused by dual scenarios will be minimized.

*Scheduled date for the next joint full-scale exercise of NAPS.

SUMMARY OF CATEGORY "B" DEFICIENCIES

Deficiency/Recommendation	Reference NUREG-0654 Part II	Correction	Proj'd Date
<u>Commonwealth of Virginia</u>			
1. The State Operations Officer should ensure that all documents concerning protective actions, to include the Governor's Proclamation of Emergency, conform with current protective action recommendations/decisions.	E.5	1. Every effort will be made to ensure that the Governor's Proclamation of Emergency conforms with current protective action recommendations/decisions.	May '86
2. The need for heightened coordination and sharing of information received by the BRH at the State EOC should be emphasized with BRH staff. Updates to radiological/meteorological conditions should be immediately forwarded to the appropriate individuals/organization.	E.5 J.9	2. An abbreviated radiological status conditions form is being developed for use with the North Anna Computer Network system. This will facilitate the transmission of more frequent and timely information to appropriate agencies and organizations.	May '85
3. Communication to the Counties regarding the timing of the simulated EBS and siren activation was belated, and no advance coordination with the primary siren activation point was demonstrated. Future exercises should actually demonstrate activation of the siren and EBS systems.	E.5 F.1.b.	3. We agree that future exercises should include an actual demonstration of the activation of the siren and EBS systems.	May '86

SUMMARY OF CATEGORY "B" DEFICIENCIES

Deficiency/Recommendation	Reference NUREG-0654 Part II	Correction	Proj'd Date
4. The Department of State Police should ensure that all police department emergency workers are issued TLDs and instructed to maintain record keeping cards. (See Louisa County report.)	K.3.a. K.3.b.	4. This observation resulted from an isolated incident. The Department of State Police has issued TLDs and record keeping cards to all emergency workers. Also, all State Police emergency workers have received instructions on the use of instruments and record keeping.	May '85
<u>State/Local Radiological Monitoring Teams</u>			
5. Field teams should be briefed with regard to meteorological conditions by the EOF prior to their deployment to the field.	J.9	5. In the future, we will ensure that the EOF will include meteorological conditions in field team briefings prior to their deployment into the field.	May '86
6. Additional training should be provided to team members with regard to decontamination procedures, maximum dose allowed without authorization, and instructions regarding procedures to be followed if dose limits are exceeded.	K.3.a. 0.4.c.	6. On-going training will be continued with regard to decontamination procedures, maximum dose allowed without authorization, and instructions regarding procedures to be followed if dose limits are exceeded.	May '86
7. Communications should be maintained between the field teams and the EOF throughout the course of the exercise as to team locations, plant conditions, etc.	F.1.d.	7. We will ensure that radio contact is maintained to improve communications between field teams and the EOF. Also, we will increase our frequency of contact with field teams and the EOF.	May '85

SUMMARY OF CATEGORY "B" DEFICIENCIES

Deficiency/Recommendation	Reference NUREG-0654 Part II	Correction	Proj'd Date
<u>Agricultural Sampling Team</u>			
8. Field sampling teams should be provided with two-way radios in their vehicles to permit the timely exchange of information.	F.1.d.	8. Two-way radios for field sampling teams is currently being scheduled for installation in order to permit the timely exchange of information.	May '86
9. Recording keeping cards should be issued to sampling teams members along with other dosimetry equipment.	K.3.a. K.3.b.	9. Record keeping cards will be issued to sampling team members as recommended.	May '86
<u>News Media Center</u>			
10. The Department of Emergency Services and Public Information staff should review information flow processes to the News Media Center to ensure the timely transmission of information regarding plant status.	E.5 G.4.b.	10. The Department of Emergency Services planning, operations, and public information staff and the licensee have met and reviewed information flow processes to the News Media Center to ensure the timely transmission of information regarding plant status.	May '86
<u>Caroline County</u>			
11. One access point to the EOC designed for use by the media was left unmonitored for an extended length of time. Arrangements should be made to prevent this in future exercises.	J.10.j.	11. Security to all EOC access points will be provided by local government.	May '86

SUMMARY OF CATEGORY "B" DEFICIENCIES

Deficiency/Recommendation	Reference NUREG-0654 Part II	Correction	Proj'd Date
12. The State EOC did not initiate any discussion with the County regarding ingestion pathway protection actions. In the absence of such State initiative, the County should have sought information concerning the ingestion pathway.	J.9 J.11	12. In the event the State EOC does not initiate transmittal of information regarding the ingestion pathway protection actions, local government should seek out information.	May '86
13. Protective clothing was not available to County emergency workers in the field. Some of this type equipment, which is available at the County EOC, should be prepositioned at a more convenient location.	K.3.a.	13. Based on the exercise, the County has relocated some protective clothing to the Ladysmith Rescue Squad Building which is located 10 miles from the power station in Caroline County--just outside the plume EPZ.	May '86
<u>Hanover County</u>			
*14. Security should be more fully demonstrated during future exercises.	J.10.J.	14. Adequate security was demonstrated at the EOC with a person positioned adjacent to the "sign-in" sheet at the EOC entrance. Other access doors were locked to prevent unauthorized entrance.	May '86
15. Elected officials should take a more active role in future exercises.	A.2.a.	15. Elected County officials will be urged to be present at future exercises.	May '86
16. If the County continues to use the operations room used in this and past exercises, a drop off for the Instaphone and additional telephone lines should be installed at the EOC. It is noted that this was an identified deficiency in the previous exercise.	F.1.d. N.5	16. Hanover County plans to construct a Public Facility Building in FY87 which will include a communications center designed to effectively address the concerns for adequate telephone lines and instaphone.	May '86 2

SUMMARY OF CATEGORY "B" DEFICIENCIES

Deficiency/Recommendation	Reference NUREG-0654 Part II	Correction	Proj'd Date
17. The EOC staff need to better develop their plans for route alerting. The EMC is unaware of how many vehicles would be needed or the path that they would take. Also, a general, prescribed message should be developed that these teams will broadcast. It is recommended that they alert residents to tune to their EBS station.	E.5 E.6 J.10.c.	17. For future exercises, a prepared prescribed statement will be developed to be broadcast by teams involved in route alerting. Such messages will alert residents to tune into their EBS station. Also plans for route alerting will be further refined as needed.	May '86
18. The RADEF Officer should refamiliarize himself with the procedures established for emergency worker radiological exposure control.	J.9 O.1	18. On-going training will continue to sharpen County workers familiarity with established procedures for emergency worker radiological exposure control.	May '86
19. Emergency workers should be fully briefed on the maximum dose allowable without authorization.	J.9 K.4 O.4.g.	19. Emergency workers will continue to be briefed on the maximum dose allowable without authorization through an on-going training program.	May '86
<u>Louisa County</u>			
20. Some emergency workers observed in the field were unfamiliar with the radiation exposure limit. Emergency workers should be fully briefed on the maximum dose allowable without authorization.	J.9 K.4 O.4.g.	20. There will be an increased emphasis placed on training of emergency workers including training in radiation exposure limits and maximum dose allowable procedures.	May '86

SUMMARY OF CATEGORY "B" DEFICIENCIES

Deficiency/Recommendation	Reference NUREG-0654 Part II	Correction	Proj'd Date
21. Route alerting teams simulated broadcasting a message which, according to County officials, would have advised residents to evacuate. In the interest of time and clarity, a general, pre-scripted message is recommended, instructing residents to tune to their EBS station.	E.5 E.6	21. The County will develop a prescribed message instructing residents to tune to their EBS station for further instructions.	May '86
<u>Spotsylvania County</u>			
22. The Superintendent of Schools act as liaison between the EOC and EAC at the County. After reporting to the EOC, however, he left because of other commitments. This is a very important position that should be manned to coordinate response activities between the EOC and EAC, thereby relieving key decision-makers of this additional function.	A.1.c.	22. In the absence of superintendent of schools, an alternate representative such as the assistant superintendent will be assigned his duties. In this particular exercise, the EOC was adequately staffed and the EOC coordinator made a decision to let the superintendent leave for other duties. The EOC coordinator accepted full responsibility for this action.	May '86
23. It is recommended that a drop off of the Instaphone be located in the EOC Operations area which would permit direct communications between the EMC and the decision-makers at the State EOC, EOF and other risk counties.	F.1.d.	23. This is presently under study, and if a drop off line is needed to improve communication, it will be added.	June '85

SUMMARY OF CATEGORY "B" DEFICIENCIES

Deficiency/Recommendation	Reference NUREG-0654 Part II	Correction	Proj'd Date
24. County operations staff are not aware of any protective action procedures for farmers in the area who may request to reenter the EPZ in order to feed and milk their livestock. The County Extension Agent should work with the State Department of Agriculture to clarify established procedures to protect these individuals.	J.10.e. J.11 K.4 O.1	24. For future exercises, the State Department of Agriculture will continue to coordinate its procedures with local government to ensure the protection of farmers in the area. The State Department of Agriculture has procedures for contacting dairy farmers directly in case of emergency.	May '86
25. Briefings to field workers should include procedures in the use of KI and maximum doses allowable without authorization.	J.9 J.10.e. K.4 O.4.g.	25. A continuing on-going training program by the County and State addresses the use of KI in times of emergencies. Procedures for its use and guidelines for its distribution will be refined.	May '86
26. The County did not demonstrate route alerting procedures. It is noted that this was an identified deficiency in the previous exercise and should have been demonstrated during this exercise.	E.5 N.5	26. According to County officials, routing procedures were demonstrated.	N/A

SUMMARY OF CATEGORY "B" DEFICIENCIES

Deficiency/Recommendation	Reference NUREG-0654 Part II	Correction	Proj'd Date
27. The physical layout at the entrance to the EAC should be revised in order to eliminate the possibility of contaminating "clean" evacuees and emergency workers. The following areas should be considered: -contaminated evacuee area and the registration area should be set further apart; -contaminated individuals should be registered after decontamination; -following decontamination, women should not have to pass through a contaminated area to enter the EAC.	K.5.b	27. This was the first time Spotsylvania County used Battlefield Intermediate School as the EAC, and upon advice from State Radiological Health representatives, developed a physical layout and procedures for handling evacuees. Further refinements to these procedures will be forthcoming based on the results of this exercise.	May '86
28. At one point in the exercise, individuals were observed entering the EAC through the kitchen area. This could pose a potential problem during an emergency, should these individuals be contaminated. Actions should be taken to provide better access control to the EAC.	J.10.j. K.5.b.	28. Spotsylvania County agrees to provide better access control at the EAC for exercises/emergencies.	May '86

SUMMARY OF CATEGORY "B" RECOMMENDATIONS

Deficiency/Recommendation	Reference NUREG-0654 Part II	Correction	Proj'd Date
<u>Commonwealth of Virginia</u>			
29. Additional training should be provided to back-up support staff responsible for message handling and status board updates.	0.1	29. Additional training will be provided to back-up personnel responsible for message handling and status board updates.	May '86
30. BRH information handling procedures should be reviewed for possible improvement, to include the need for clarification of messages received if not completely clear.		30. Information processing procedures will be reviewed to include the need for clarification of messages received.	May '86
31. The EOC PIO should utilize available hard copy transmission devices (telefax, VCIN or the new computer network) to provide the Counties with timely information updates.	6.4.b.	31. The EOC PIO will utilize the computer (primary means) or other available means to provide the County with timely information updates for future exercises.	May '86
<u>State/Local Radiological Monitoring Teams</u>			
32. It is recommended that the joint teams expeditiously prepare for field deployment at the staging area to allow for immediate deployment upon direction from the EOF.	I.8	32. The joint teams will continue their training activities to ensure rapid deployment upon direction by the EOF during exercises/emergencies.	May '86

SUMMARY OF CATEGORY "B" RECOMMENDATIONS

Deficiency/Recommendation	Reference NUREG-0654 Part II	Correction	Proj'd Date
33. Consideration should be made for more extensive use of the field teams' capabilities, i.e., the monitoring of additional locations and a greater variety of samples, including water, soil and/or vegetation.	1.8	33. Consideration will be given for more extensive use of the field team's capabilities.	May '86
<u>News Media Center</u>			
34. It is recommended that a working area be set aside for PIO staff use, secluded from the media briefing area.		34. A working area will be set aside for PIO staff use, to be separated from the media briefing area.	May '86
<u>Caroline County</u>			
35. All significant incoming and outgoing EOC messages should be logged. Significant on and off-site events, including emergency classification levels, should be posted and updated in order to enable newly arrived staff to quickly orient themselves as to the status of the emergency response.		35. A status board will be utilized to record significant incoming and outgoing EOC messages.	May '86

SUMMARY OF CATEGORY "B" RECOMMENDATIONS

Recommendation	Reference NUREG-0654 Part II	Correction	Proj'd Date
<u>Hanover County</u>			
36. The antennae cable for the RACES equipment had been severed, requiring the RACES staff to operate from their vehicle outside of the building, somewhat delaying the receipt of messages. The antennae cable should be repaired.	F.1	36. The antennae cable will be repaired.	May '86
37. A larger room providing seating for anticipated press representatives would better accommodate media functions. Additional maps, such as the EPZ and Evacuation Route maps, would be extremely helpful in accomplishing more effective briefings.	J.10	37. Additional maps and a larger room for media functions will be considered within present building constraints. Note #16.	May '86

SUMMARY OF CATEGORY "B" RECOMMENDATIONS

Deficiency/Recommendation	Reference NUREG-0654 Part II	Correction	Proj'd Date
<u>Louisa County</u>			
38. County officials strongly favor using the siren system and EBS to provide early warning to the public, preferably at the Site Area Emergency phase. This does not conform to the State's policy of using the sirens and EBS to alert and notify the public at the time protective actions are announced. It is recommended that County and State officials resolve this issue by developing a coordinated approach towards the use of the siren and EBS public notification systems.	E.5	38. Options for sounding the sirens and EBS are being considered at present with appropriate parties.	May '86
39. The capability for the exchange of hard copy news releases among the County EOC, State EOC and the Joint Media Center was not available at the County. In order to permit effective coordination of news releases between the County and State PIOs, some means for transmitting and receiving hard copy news releases should be established and used at the County EOC.	G.4.b.	39. The North Anna Network system will be utilized for this function.	May '86

SUMMARY OF CATEGORY "B" RECOMMENDATIONS

Deficiency/Recommendation	Recommendation NUREG-0654 Part II	Correction	Proj'd Date
40. It is recommended that a large, clearly visible status board be utilized at the County EOC.		40. Louisa County will utilize a large, clearly visible status board at the County EOC.	May '86
<u>Orange County</u>			
41. It is recommended that a dedicated line or other direct communication link between the Dispatcher's Office and the EOC be established.	F.I.d.	41. This recommendation for a line linking the dispatcher's office with the EOC will be accomplished.	June '85
<u>Spotsylvania County</u>			
42. The EOC operations room is a somewhat congested area when all staff are present. It is recommended that the message center be relocated to the room immediately adjacent to the operations room to alleviate some of this congestion.		42. This recommendation is presently being considered by County officials.	May '86

SUMMARY OF CATEGORY "B" RECOMMENDATIONS

Deficiency/Recommendation	Reference NUREG-0654 Part II	Correction	Proj'd Date
43. Message center personnel maintain an official copy of all messages and are responsible for maintaining the status boards and official message logs. To relieve some of the demands placed on message center personnel, message logs should contain only essential information, not the entire text of the message.		43. Message logs will be reviewed to see if they can be streamlined to contain essential information only. Naturally, the County must decide what is essential and what isn't.	May '86
44. Although the staff in the EAC knew their individual assignments, the EAC Manager did not provide sufficient supervision and coordination to combine these individual functions into a smoothly run operation. The staff were informed of the status of activities during the exercise.	0.4.	44. On-going training will be forthcoming to improve overall performance of EAC personnel. Note #27 response.	May '86

FEDERAL EMERGENCY MANAGEMENT AGENCY

REGION III

EXERCISE EVALUATION REPORT

FACILITY: NORTH ANNA POWER STATION
Town of Mineral, Louisa County, Virginia

REPORT DATE: January 18, 1985

EXERCISE DATE: November 15, 1984

PARTICIPATING
JURISDICTIONS: Commonwealth of Virginia
Risk Counties of Caroline, Hanover, Louisa,
Orange, Spotsylvania

NON-PARTICIPATING
JURISDICTIONS: None

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EXERCISE SUMMARIES

Commonwealth of Virginia Emergency Operations Center (EOC)

In general, activities at the State EOC were well organized and representatives from all of the organizations present demonstrated skill and knowledge in the performance of their responsibilities. The communications capability at the State is excellent. Increased emphasis is needed with regard to the timely transmission of radiological/meteorological information from BRH at the EOC to other response organizations. Demonstrated activation of the siren system and FBS is recommended in future exercises.

Emergency Operations Facility

The Bureau of Radiological Health representatives at the EOF displayed adequate training and knowledge to carry out their assigned responsibilities. Calculations were promptly made as received from the radiological monitoring teams. All functions were performed in a prompt and professional manner and any identified problems were quickly corrected.

State/Local Radiological Monitoring Teams

Four joint State and Local Radiological Monitoring Teams were deployed during this exercise. The teams were, in general, well outfitted with required monitoring equipment and team members displayed adequate knowledge with regard to the use of the monitoring equipment available. Instruction with regard to meteorological conditions should have been provided to the teams prior to deployment, and communication with the EOF throughout the exercise was limited. Local team members should be better instructed as to their roles on the team, especially with regard to the predesignated location of monitoring points. More effective use of the teams should be considered in future exercises, i.e., deployment to additional locations and greater variety of samples (water, soil, vegetation).

Agricultural Sampling Teams

Milk and vegetation sampling teams adequately demonstrated sampling techniques, collecting both samples by 1745 and transporting the samples to the laboratory by 1900. Team members were knowledgeable regarding the proper use of dosimetry equipment and KI. However, record-keeping cards should be issued to the team members along with the dosimetry equipment and two-way radios should be made available to the teams to permit timely exchange of information.

Red Cross District Office (Fredericksburg)

The Red Cross District Office demonstrated adequate resources to support emergency response operations.

News Media Center

The Public Information Officer and staff were well-trained individuals who demonstrated adequate knowledge and procedures for staffing and operation of the News Media Center. Information regarding escalation to General Emergency was received at 1755, nearly thirty minutes after its occurrence. The organization of the media center facility could be improved by providing a working area for PIO staff secluded from an area set aside for media representatives.

Caroline County EOC

Caroline County, in general, demonstrated a capability to implement its plan to cope with an emergency at NAPS. Personnel and resources are more than adequate for the small number of households and land area within the ten mile emergency planning zone falling within the County.

Hanover County EOC

The staff of the Hanover County EOC responded to the simulated accident at the North Anna Power Station in a most professional manner. Staffing occurred in a prompt manner and the facilities at the County are adequate to support emergency operations in general. The communications area could use some improvement in terms of a link off the Instaphone, additional telephones in the EOC and better arrangements for RACES. Adequate procedures were displayed for traffic control and dealing with the mobility impaired. Knowledge concerning radiological exposure control should be updated. The field activities (evacuation assembly center, decontamination, traffic control) were demonstrated in an adequate manner.

Louisa County EOC

Activation of the EOC and mobilization of the staff occurred efficiently and in accordance with the plan. The EOC was fully staffed and the staff generally displayed adequate training and knowledge.

County officials took appropriate action in directing the County's emergency response during the early phases of the exercise. However, after receiving the Governor's evacuation directive, which they perceived as being inappropriate, County officials failed to contact the State EOC for clarification. This resulted in a thirty-five minute delay in implementing the evacuation.

The exercise revealed a disagreement over the use of the primary alert and notification system. County officials want to use the sirens and EBS to provide early warning for the public, preferably at the Site Area Emergency phase. The State's policy is to use the system as a means of announcing protective actions. It is recommended that the State and County coordinate a resolution to this issue.

The EOC facility was adequate and the County's communication capability was very good, with one exception. The County did not have the capability to

transmit and receive hard copy news releases with the State EOC and the Joint Media Center, thus precluding effective coordination of news items between the County and the State PIOs.

The County demonstrated good capability to contribute to the dose assessment effort by deploying five radiological field monitoring teams. The teams' activities were ably directed by the Radiological Officer at the County EOC, and the teams demonstrated good capability in the field.

Orange County EOC

Overall radiological emergency response activities demonstrated during this exercise were well-coordinated. Emergency response staff demonstrated adequate knowledge and training with regard to their assigned responsibilities. The establishment of a direct communications link between the Dispatcher's office and the EOC is recommended.

Spotsylvania County EOC

The overall response demonstrated by Spotsylvania County was well coordinated and in accordance with the County Radiological Emergency Response Plan.

The Superintendent of Schools did not remain in the EOC to perform his function as liaison between the County and the Evacuation Assembly Area. This position is important to insure a free flow of information between the EOC and the EAC.

The County Extension Agent was aware of six dairy farms in the area. However, he was not aware of procedures for farmers to reenter the EPZ in order to feed and milk their cattle. The State Department of Agriculture should work with the County Agent to clarify established procedures which would protect these individuals.

The Instaphone is presently located in the Sheriff Department's Central Dispatch Office. In order to facilitate direct communications between the EMC, State decision-makers, EOF and other risk counties, a drop off to the Instaphone should be located in the EOC operations area.

For the most part, the Evacuation Assembly Center staff demonstrated the capability to adequately operate during an emergency situation. The lay-out of the EAC should be reviewed and more comprehensive security provided to the center.

It should be noted that in Spotsylvania County over 100 people were involved as players in the exercise, most of whom were volunteers. They should be commended for their enthusiasm and dedication.

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 North Anna Power Station and the various off-site organizations.

The Commonwealth of Virginia's State and local plans and preparedness for the North Anna 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 North Anna Power Station based upon the actual demonstration or simulation of their abilities during the November 15, 1984 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.

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

PARTICIPATING JURISDICTIONS/ORGANIZATIONS

State Agencies

Agriculture and Consumer Services, Department of
Air Pollution Control Board, State
Conservation and Economic Development, 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
Mental Health and Mental Retardation, Department of
Military Affairs, Department of
Social Services, Department of
State Police, Department of
Water Control Board, State

Local Governments

Caroline County
Hanover County
Louisa County
Orange County
Spotsylvania County

Private Organizations

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

Virginia Electric and Power Company (VEPCO)

1. Corporate Headquarters
2. North Anna Power Station (NAPS)

LIST OF OBSERVER ASSIGNMENTS

RAC Chairman	James R. Asher (FEMA)
Regional Director	Paul Giordano (FEMA)
Virginia State EOC	Karen Larson (FEMA) Project Leader Penny Wallingford (ANL)
EOF	Bob Trojanowski (NRC)
EOF/BRH	Jerry Combs (DOE)
State/Local Radiological Monitoring Teams	Don Newsome (ANL) Team Leader Caroline Herzenberg (ANL)
Field Sampling Teams	Bob Conley (USDA) Anna Hill (USDA)
Communications	Fred Donnelly (FEMA)
Media Center	Hugh Laine (FEMA)
Louisa County EOC	Steve Hopkins (FEMA) Team Leader John Tatar (ANL)
Spotsylvania County EOC	Jan Lamb (FEMA) Team Leader Walt Adams (DOT) Gary Seidenfeld (FEMA Region II)
Hanover County EOC	Rick Kinard (FEMA) Team Leader Dennis Figg (FEMA) Paul Farber (ANL)
Caroline County EOC	Joe Gavin (FEMA) Team Leader John Wells (HHS)
Orange County EOC	Dale Petranech (ARC) Team Leader Tom Majusiak (FEMA)

EVALUATION CRITERIA USED

The Commonwealth of Virginia and local governments' response during this exercise was evaluated in relationship to the Commonwealth of Virginia Emergency Operations Plan, Annex I-V to Volume II, Radiological Emergency Response Plan, dated June 1983, and the Radiological Emergency Response Plans for Caroline, Hanover, Louisa, Orange and Spotsylvania Counties, dated April 1981. These plans were prepared under the authority of the Commonwealth of Virginia Emergency Services and Disaster Law of 1973 (Code of Virginia, Chapter 3.2, Title 44), as amended, and were developed in accordance with NUREG-0654/FEMA REP-1, Rev. 1, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants", November 1980.

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). (Simulated)
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 the 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

The on-site scenario called for Units 1 and 2 to be operating at full power equilibrium. The Unit 2 reactor core was at midlife and fission product coolant inventory was considered to be normal. Failure of a pump motor caused an electrical fire in the motor control center, which spread to involve stored contaminated waste oil. The fire was considered to be out of control in ten minutes and an "Unusual Event" was declared. Off-site fire assistance was requested and the fire extinguished. Two employees received injuries, were contaminated, and transported to a support hospital. An "Alert" was declared when letdown coolant activity exceeded 1.0×10^6 cpm for greater than fifteen minutes, indicative of severe clad damage. Fuel failure due to loose parts and a known leak of containment resulted in the declaration of "Site Area Emergency". "General Emergency" was declared following the loss of two out of three fission product barriers, with the potential loss of the third. Radioactive effluent escaped through faulted containment ventilation piping resulting in an unplanned/uncontrolled release across the Site Boundary.

In order to demonstrate protective action measures in all five counties located within the plume EPZ, the technical scenario and recommendations for protective actions by the Bureau of Radiological Health were administratively expanded by the Director of Operations in the State EOC to cause evacuation protective measures to be implemented 360 degrees out to ten miles. The evacuation involved all participating State, County and private organizations in the area.

SCENARIO CHRONOLOGY OF EVENTS

<u>Projected</u>		<u>Actual</u>
1200-1345	Notification of Unusual Event	1318
1345-1415	Alert	1348
1600-1630	Site Area Emergency	1637
1700-1715	Evacuation of NAPS Non-Essential Personnel	1701
1715-1730	General Emergency	1726
2000	Recovery Phase (on-site only)	2020
2100	Exercise Terminates (on-site only)	2030
2130	Recovery Phase (off-site)	2115
2300	Exercise Terminates (off-site)	2208

DEMONSTRATION OF RESOURCES

- State and County EOCs.
- Communications systems and equipment.
- Staffing of facilities.
- Simulation of notification system (siren system and EBS).
- Route alerting.
- State and County Media Centers, including rumor control.
- Field sampling teams (food, milk) and equipment.
- Evacuation Assembly Centers.
- Designated access control and traffic control points.
- Combined State/local and local field radiological monitoring teams.
- Bus evacuation routes.
- Self-reading dosimeters, dose records, TLDs and simulated KI for emergency workers.

PREVIOUS DEFICIENCIES AND RECOMMENDATIONS

<u>Recommendation</u>	<u>Status</u>
<u>Virginia State EOC</u>	
1. Consider placing staff positions on shift schedule roster so that both names and duties are indicated.	1. Adequately addressed.
<u>Caroline County</u>	
2. The elected officials should be present and actively involved in decision-making in future exercises.	2. Adequately addressed.
3. Periodic briefings to update EOC staff on the situation should be held in future exercises.	3. Adequately addressed.
4. Future scenarios should provide enough activity to allow meaningful participation by and adequately test the capabilities of the EOC staff.	4. Adequately addressed.
<u>Hanover County</u>	
5. To improve Hanover County's communication capability, a drop-off line to the Instaphone into the EOC should be installed. This will insure that nothing is lost in the relay of traffic between the EOF and communications/dispatcher office. In addition, it will free the commercial lines for other traffic.	5. Not demonstrated. This action has not been accomplished at the County EOC, and remains a deficiency with County EOC operations.
<u>Louisa County</u>	
6. Louisa County should consider using either the CAP or RACES as a means of communications between the radiological teams and the EOC's. Alternate each exercise using one for backup of other communications. This will ensure them a means of checking out their equipment and procedures.	6. Adequately addressed, although RACES was minimally used by the County EOC.
7. There are currently no permanent record dosimeters available for County emergency workers. Film badges	7. Adequately addressed.

or TLD's, in the necessary numbers, should be obtained as soon as possible, in order to assure a history of exposure (or lack of it) for workers involved in responding to any incidents at the North Anna facility.

- | | |
|--|--|
| 8. Refresher training should be given to all radiation monitors to assure they will continue to remain totally familiar with all the various aspects of this critical function. | 8. Radiation monitors demonstrated adequate capability to perform their assigned function. |
| 9. The County should continue to update their monitoring teams and any individuals operating in the field to reassure them that they are not in, or heading towards, a hazardous area. | 9. Adequately addressed. |

Orange County

- | | |
|---|---------------------------|
| 10. Orange County EOC should expedite notifying key personnel at the Alert stage, and assume taking responsibility for Instaphone messages. | 10. Adequately addressed. |
|---|---------------------------|

Spotsylvania County

- | | |
|--|--|
| 11. The capability for a shift change should be demonstrated in future exercises; the coordinator should maintain a two-shift roster for all responding agencies. | 11. Adequately addressed. |
| 12. Elected officials should participate in future exercises. | 12. Adequately addressed. |
| 13. The County officials should recognize the State's accident assessment capability and implement the protective actions promptly and without "second guessing", in order to establish a uniform and effective response. | 13. Adequately addressed. |
| 14. As there is no capability to quickly and accurately identify siren failures, route alerting should be performed as a matter of course, to provide a secondary means of notifying the public. As specified in the plan, | 14. Not demonstrated. This activity remains as a deficiency with Spotsylvania County Operations. |

Sheriff's deputies should be used to perform this duty, leaving other emergency workers free to complete their assignments without interruption.

15. The County should consider placing rumor control within the PIO operation to provide the opportunity to share the PIO's access to information.

15. Adequately addressed.

EXERCISE OBJECTIVES STILL TO BE EFFECTIVELY ACHIEVED

4. No advance coordination with the primary siren activation point and no EBS message construction were demonstrated at the State EOC; notification to the Counties regarding siren activation was belated.
6. Louisa County officials delayed the implementation of evacuation protective actions for an extended period of time following notification from the State EOC.
12. Heightened coordination and dissemination of information obtained by BRH at the State EOC is recommended.
18. Free-play in the decision-making process regarding protective measures for the plume EPZ at the State EOC was limited due to the administrative expansion of recommended actions to include evacuation for 360 degrees out to ten miles.
19. Access control was not comprehensively demonstrated at the Spotsylvania EAC and the Hanover and Caroline County EOCs.
20. Hanover County did not demonstrate active involvement by elected public officials.
21. Specific information regarding route alerting procedures was not available at Hanover County; procedures for protective actions for farmers acting as emergency workers was not available in Spotsylvania County; Louisa County should consider establishing a standard message for route alerting teams; Spotsylvania County did not demonstrate route alerting procedures (an identified deficiency in the previous exercise). Louisa County delayed implementation of evacuation procedures for thirty-five minutes following a directive from the State EOC.
22. Agricultural Sampling Teams should be provided two-way communications capability; a drop off to the Instaphone and additional telephone lines should be installed at the Hanover County EOC; a drop off line is also recommended at the Spotsylvania EOC Operations Room. Protective clothing was not available to emergency workers in the field in Carolina County.

EXERCISE REPORTS

Commonwealth of Virginia EOC

I. Activation and Staffing

Notification of an Alert at the North Anna Power Station was received at the Virginia State EOC at 1404 acting to initiate activation of the EOC. The primary communications link with the utility is via a direct Instaphone line, making verification of calls unnecessary.

Mobilization of staff was accomplished via up-to-date name and telephone number listings. Full staffing of the EOC was complete at 1734, and included Department of Emergency Services staff, Department of Health, Emergency Medical Services, Department of Agriculture, National Guard, State Police, Department of Information Technology, and RACES. Other participating organizations activated representatives at their respective offices due to limited office space at the EOC.

Round-the-clock staffing capability was demonstrated by double staffing and by presentation of a roster. An actual shift change was demonstrated for the DES Operations Officer position at 1608. The second shift staff person was briefed and provided copies of all messages transmitted up until that point in the exercise. All designated positions demonstrated adequate training and knowledge. A rotational duty system provides for EOC activation capability during non-working hours.

II. Emergency Operations Management

Emergency operations at the State EOC were effectively overseen by the Director of Operations and coordinated by the Operations Officer. Periodic briefings were held to update the desk officers on exercise activities. Message handling and updating of the status board was initially somewhat disorganized until this support position was filled by the regularly assigned individual. Additional training with regard to efficient message handling is recommended for this back-up individual. Access to the EOC was controlled via sign-in/out sheets and the issuance of identification badges.

Notification of Alert was received at the EOC at 1404, of Site Area Emergency at 1644, and of General Emergency at 1730. Protective action recommendations were received on several occasions from the EOF, the first of which was received at 1735, which advised sheltering for 360 degrees out to two miles, and out to five miles for P, Q, R. A Governor's proclamation of a State of Emergency was simulated at 1740; however, revision to the pre-written proclamation should have been made as protective action recommendations (evacuation for a two mile radius and up to five miles downwind) did not correspond with those of the EOF nor with the expanded actions of

the State EOC. In accordance with the exercise scenario, an administrative expansion to the recommended protective actions was made at the State EOC, to include evacuation for 360 degrees out to ten miles, in order to demonstrate protective actions at all five plume counties.

Federal assistance was not requested, although timely notification to the FEMA Regional Office was completed for each change in plant status classification. The Commonwealth's Secretary of Transportation and Public Safety was in attendance during the exercise, although not involved in decision-making.

III. Facilities

The State EOC facility is well-equipped with ample furniture, space, lighting and telephones to support emergency operations. A status board was clearly visible and was kept up-to-date on significant activities during the majority of the exercise. Maps were posted which indicated the plume EPZ, evacuation routes, relocation centers, traffic control and access control points, radiological monitoring points and population by evacuation area.

IV. Communications

Communications facilities at the Virginia State EOC were excellent. Voice communications between the State EOC, the licensee, the EOF and to the County EOC's utilized the instaphone system and the Ring-Down system, both dedicated land lines. Two hard copy systems also connected the State EOC with the EOF, the licensee and the County EOC's. The Virginia Criminal Information Network (VCIN) was a teletype system used regularly and effectively to relay hard copy messages to numerous points and provided the State EOC with an automatic "log" of all communications sent on the system.

According to the Communications Officer, the National Warning System (NAWAS), a dedicated land line, provides a primary communication link to contiguous states through a national teletype system. Commercial telephone lines are available for back-up communications. The same systems are available to connect the State EOC to FEMA, although commercial lines served as the primary resource during this exercise.

Commercial telephone equipment provided primary communications to the EBS stations. Secondary facilities included a VHS remote programming unit. Commercial telephone, direct radio (VHF and UHF), Red Cross mobile units and RACES systems are used to provide communications to local schools and support hospitals. Communications with the radiological monitoring teams was conducted primarily through the EOF and County EOC's.

Communications to the media center were handled through the commercial telephone system; back-up would be available from the new computer network. Some difficulties were experienced with the

computer network during the course of the exercise, but it eventually became operational near the end of the exercise. This network, when installed and incorporated into standard operating procedures, should provide valuable assistance in the overall communications network. However, in lieu of this computer system, facsimile equipment available between the EOC and the media center should be utilized for the transmission of hard copy information.

V. Dose Assessment and Protective Action

The Bureau of Radiological Health at the State EOC does not have the operational lead for calculating projected doses or for recommending protective actions; by plan, these activities are undertaken at the EOF. A medical doctor from the State Health Department was a member of the EOC Radiological Health team and numerous references were available for use during the exercise.

Field readings were received from the EOF while in operation. Readings were then received from the local monitoring teams via the Counties. For the most part, these readings were timely. Readings, along with output from the Weather Bureau and NAPS TSC (regarding status of the plant), were carefully reviewed in anticipation of a potential radioactive release and the need for protective action(s). However, this data was not regularly communicated to other elements within the State EOC nor to the County EOC's. Data on radiation levels in the area of the plume were initially posted on a map, however, no changes or additions to the map were made as additional data was received.

Based on a recommendation from the EOF at 1855, the representative from the Public Health Department at the State EOC gave the instruction to the Radiological Health Officers in Spotsylvania and Louisa County EOC's to administer KI to emergency workers in Sectors Q and R. This recommendation immediately followed an announcement from the EOF as to high radiation readings and presence of radioiodine in Sectors Q and R. Approximately 20 minutes later the EOF called to inform the Radiological Health Officer at the State EOC that there had been a laboratory error. No iodine was present and the plume did not touch the ground due to a meteorological inversion. However, the counties were not recontacted in order to forward this information error.

Communications and information handling by the Bureau of Radiological Health at the State EOC should be reviewed for possible improvement. Many of the messages (both incoming and outgoing) were not logged, tracking and posting of radiological monitoring data was inconsistent, and periodic summaries or briefings by the Radiological Health Officer were not provided. Also, communication between the Radiological Health Representatives and other response organizations was limited. For example, the Bureau of Radiological Health requested milk sampling in response to an inserted canned message by the State Controller at 1810. Sample results were received at

approximately 2025 indicating high radiation levels, but were not promptly conveyed to the Department of Agriculture. The physician stated that these results were probably in error, but made no effort to verify the information. Twenty minutes later a phone call from the EOF conveyed that the results were incorrect and that there was no contamination.

On two occasions messages were received via RACES which were unclear as to the location of sampling points (a double letter system was being transmitted by the County versus a single letter locating point system used at the State). A message at 1915 was also confusing with respect to monitoring results. Efforts were made to decipher this quandary with the RACES operator, however, this message was never properly resolved. It is noted, however, that the subject sampling was from an area outside the anticipated plume pathway.

VI. Public Alerting and Instruction

A call via the Instaphone from the EOF at 1735 recommended protective actions which were administratively expanded at the State EOC to include evacuation for 360 degrees out to ten miles at 1740. Activation of the sirens and EBS were simulated to have occurred simultaneously at 1759. However, the support staff was not briefed and directed to notify the County EOC's until 1803. No advance coordination for siren activation was demonstrated with the primary action office at the Louisa County EOC. Advance notification to the County EOC's of siren and EBS activation is recommended in order to ensure a well-coordinated emergency response operation. Activation of the EBS was simulated, and although the development of emergency public instructions was not demonstrated, this activity was successfully demonstrated in previous exercises. A 1753 Vopex message to local Emergency Services Coordinators instructed those people in Louisa, Spotsylvania, Hanover, Orange and Caroline Counties, in all evacuation zones, to evacuate in an orderly manner to their designated Evacuation Assembly Centers. Due to the timing of the exercise, no considerations were demonstrated regarding the evacuation of school children.

VII. Protective Action

A. Evacuation and Access Control

Activation of traffic control points was announced over the VGIN immediately following the Governor's proclamation of a State of Emergency and the ensuing recommendation for a ten mile, 360 degree evacuation. Air traffic was instructed to be rerouted following an indication of a radioactive release from the power station. Actions to initiate the rerouting of water and rail traffic were not observed.

County EOC's were directed to activate designated Evacuation Assembly Centers (EACs) at 1747; follow-up inquiries with regard to the status of EAC activities were demonstrated.

B. Special Evacuation Problems

Not applicable at the State level.

C. Implementation of Ingestion Pathway Protective Actions

Information regarding the location of food processing plants was available with the Department of Agriculture representative at the State EOC. According to the Radiological Health and Agriculture Officers, dairy farm locations are available through the main office of the Department of Agriculture; water supply intake points are available through the State Water Control Board and soil maps are in Agriculture field offices. The Department of Agriculture, State Water Control Board and Fire Services would reportedly be available to assist with the implementation of protective actions undertaken by farmers, foodworkers and water utilities.

During the North Anna exercise, requests to sample soils, milk, water and fish were made by the State EOC, in general, in response to canned messages inserted to exercise play by the State EOC Controller. Reports of initial milk sample analysis indicated high levels of radiation, however, approximately twenty minutes later the initial report of contamination was rescinded as being incorrect.

A message was received from the Hanover EOC at 2046 requesting a response to eight local evacuees who had requested to reenter the evacuated area in order to feed and water their livestock. This request was responded to by BRH based on information received from the EOC at 2050 which indicated that no ground contamination had occurred as the plume had dispersed in the upper atmosphere. However, a canned message regarding contaminated milk products at 2105 was responded to by the Department of Agriculture. The Dairy Inspector was advised to take specific protective actions and to check with the Health Department "to see if it is safe to enter the area". Increased information coordination would assist the EOC to comprehensively respond to ingestion pathway considerations.

VIII. Radiological Exposure Control

According to the Radiological Health Officer, low and high-range dosimeters, chargers for dosimeters, record keeping cards and TLD's are available at the State EOC, although this equipment was not observed. The EOC is located outside the ten mile EPZ and no emergency workers are issued from the EOC. The BRH and Emergency Medical Staff were well versed on the procedures for radiological exposure control should such expertise be needed in the EOC or requested by response organizations. Adequate supplies of dosimetry are reported to have been predistributed to the counties. Potassium iodide in the amount of 500 doses is reported available for emergency workers' use under the coordination and direction of the Regional Medical Directors.

IX. Media Relations

No provisions for briefings to the media were made at the State EOC, as by plan this is a function of the Joint Media Center. News releases, as received from the Joint Media Center and cleared by EOC operations, were forwarded to the counties verbally via telephone; although a telecopier was available, it was not used to transmit this information. Once operational, the North Anna computer network should provide the capability for transmitting hard copy releases. In lieu of this network, the telecopier should be used for this purpose to provide the timely transmission of information. A rumor control number was established and manned, but no calls were received over the line.

X. Recovery and Reentry

Recovery and reentry activities were limited and somewhat unorganized at the State EOC. At 2050 the Hanover County EOC was advised by BRH that farmers could return to the evacuated areas as the plume had dispersed into the upper atmosphere and that there was no ground contamination. However, it was not until 2155 that the BRH advised the Director of Operations that "radioactivity levels had dropped below emergency classification - recommend reentry into evacuated areas". Timely communication and coordination between the Bureau of Radiological Health representatives and the Director of Operations regarding radioactivity/meteorological conditions should be stressed in future exercises.

XI. Scenario

The scenario for this exercise was devised to include an administrative expansion of EOF recommended protective actions to include the evacuation of the entire plume EPZ. This acted to increase exercise play and allow the demonstration of protective action activities in all five affected counties. However, BRH representatives assigned to the EOC demonstrated some confusion with regard to their roles in the exercise when State and local jurisdictions' activities did not correspond with incoming field readings and EOF protective action recommendations, nor with the inserted canned messages. Confusion also arose at one of the counties resulting in a delayed response to the order to evacuate the entire EPZ. Message traffic from the EOF had to be reorganized in order to limit the transfer of potentially conflicting radiological information to the counties. To avoid possible confusion in future exercises in which protective action recommendations are administratively expanded, it is recommended that these actions be announced to all organizations as a precautionary measure undertaken by the State within the scope of the ongoing scenario. Also, canned messages should be prepared and introduced so as to better conform with and support exercise play.

Commonwealth of Virginia EOC Deficiencies/Recommendations

1. Additional training should be provided to back-up support staff responsible for message handling and status board updates.
2. The State Operations Officer should ensure that all documents concerning protective actions, to include the Governor's Proclamation of Emergency, conform with current protective action recommendations and/or decisions.
3. The need for heightened coordination and sharing of information received by the BRH at the State EOC should be emphasized with BRH staff. Updates to radiological/meteorological conditions should be immediately forwarded to the appropriate individuals/organizations.
4. BRH information handling procedures should be reviewed for possible improvement, to include the need for clarification of messages received if not completely clear.
5. Communication to the counties with regard to the timing of simulated EBS and siren activation was belated; in some instances occurring after the simulated activation time. Also, no advance coordination with the primary contact point (Louisa County) for siren activation was demonstrated. In order that this activity, and all associated activities, may be fully and adequately exercised and demonstrated, it is recommended that future exercises actually demonstrate activation of the siren system and EBS network.
6. The EOC PIO should utilize available hard copy transmission devices (telefax, VCIN or the new computer network) to provide the counties with timely information updates released to the public at the State level and to provide a responsive receiving system for county-developed releases.
7. The Department of State Police should ensure that all police emergency workers are issued TLD's and instructed to maintain their record keeping cards. (See Louisa County report.)

Emergency Operations Facility

The EOF was located in the VEPCO training facility of the North Anna Power Station. Participating personnel from the Virginia Bureau of Radiological Health included the Director, an Administrative Aide, a Dose Assessment Officer and a radio operator. Representatives from the Department of Emergency Services included an Emergency Management Director and an assistant, who were briefed concerning plant status upon arrival and established communication with the State EOC in an effective and timely fashion. All individuals were in-place when the EOF was activated at 1540. The Bureau personnel can be assembled through a rotating Duty Officer system, using office phones, home phones and pagers, any hour of any day. The Bureau staff displayed

adequate training and knowledge to carry out their responsibilities. Round-the-clock staffing was demonstrated via an extensive roster for changing shifts.

A 12' x 12' room next to the Training Reactor Control Room was assigned to the Bureau staff. The room was adjacent to the VEPCO Dose Assessment Staff and near the NRC Assessment Staff. The assigned area was adequate in terms of size, space and equipment.

Primary communication lines from the Bureau to the State and local EOCs include Ring-Down phone and Instaphone; both are dedicated land line systems. The secondary line to the State was via radio. Secondary lines to local EOCs or the Media Center would be through the State EOC (not observed).

The Bureau was not directly involved with media or rumor control functions.

Dose projections were derived from data provided by VEPCO regarding the plant radiological release and from data provided by Bureau field team readings. These data, plus other parameters, were entered into the Bureau computer to calculate projected doses. Problems were encountered with the Epson printer and with the phone from about 1700 to 1730, but functioned well after required corrections. The Bureau staff were capable of hand calculations, but it was not necessary to demonstrate that capability due to the use of the computer. Calculations were made promptly as data was received from the Bureau teams. The Bureau checked their calculations against those derived by the VEPCO Dose Assessment Group. Monitoring data was not plotted on the Bureau map. The Bureau Director directed the four teams promptly to define the plume. The plume was defined correctly. Readings from the field teams were radioed to the Bureau base station promptly. There was no need to estimate total population exposure because of the evacuation order. Protective action decisions were applied to both plume and ingestion pathway hazards. These decisions were based on Bureau (Virginia) exposure guidelines that are within the EPA guides. Factors considered in the guidelines were plant status, weather, etc. Activities or discussions involving KI were not observed. Protective action recommendations were reviewed and updated promptly as conditions changed, discussed and jointly agreed to by the Commonwealth and VEPCO representatives, and forwarded to the State EOC in a timely fashion.

The Bureau performed its functions in a prompt and professional manner.

State/Local Radiological Monitoring Teams

I. Field Team Mobilization

Mobilization of the four joint field teams was only partially demonstrated during this exercise. State and local personnel were given advance instructions to report to the Mineral Fire House

staging area at specified times. Deployment of the teams from the Fire House was directed from the EOF. Team equipment was packed in the vehicles in such a manner that rapid deployment should have been possible. However, despite having over an hour between the State personnels' arrival at Mineral (1530) and the first order to deploy (1640), the first two teams took ten to twenty minutes after the deployment order before they were ready to depart. This time was occupied in sorting out dosimetry, record keeping forms and repacking equipment, activities that could have been completed earlier to enable departure immediately upon direction.

Before deploying, the teams were briefed on plant conditions, exposure control procedures, equipment checking procedures and division of responsibilities among members. However, there was no briefing on current meteorological conditions. Also, the local members of the joint teams had apparently not received detailed instructions prior to the exercise about their responsibilities. Consequently, they were not well prepared to follow the available local maps. Most of the teams were able to find their assigned field locations within fifteen to twenty minutes, but one team had great difficulty, spending approximately one hour to locate their designated position. During this interim, communication was lacking between the field team and EOF as to the actual location of the team.

II. Field Team Equipment

Field team vehicles were large enough for team members and their equipment and suitable for most expected weather and terrain conditions at preselected monitoring points. The vehicles used were automobiles rather than 4-wheel drive vehicles, which might have encountered difficulty in extreme weather conditions.

The copy of the State plan referred to did not appear to contain a list of equipment for the monitoring teams; instead the teams referred to documents from the Bureau of Radiological Health, State Department of Health. Checklists of required equipment were available to team members and were in reasonable accord with the equipment on hand. The available radiation monitoring instruments included GM Survey Instruments and Ionization Chamber Ratemeters. No alpha detectors or end window GM counters were observed. Each of the four combined State/local field teams had air sampling equipment. Two teams had air pumps which operated off of vehicle battery power, while the other two teams had air pumps which operated off of self-contained batteries with presettable timers. The air sampling pumps checked had decals indicating calibration in 1980, but personnel indicated they had been calibrated within the last few months. Both charcoal cartridges and silver Zeolite cartridges for iodine sampling were in use as well as particulate filters. One team also had equipment for on-location radioiodine measurement. The teams had equipment for soil and vegetation sampling, including scoops, plastic collection bags, plastic containers, writing materials and identification labels. For water sampling, plastic collection jugs

and a bucket and rope were available. Considerable additional equipment was available, including further radiation monitoring equipment (a Ludlum GM counter supplied by the State and an OCD CDV-700 survey meter brought by a local team member), orange reflective vests for personnel safety during roadside monitoring, anticontamination suits, boots, gloves, respirators, etc.

The principal radiation monitoring equipment in use (Eberline Model E-520 geiger counter) was marked as calibrated on November 9, 1984.

III. Field Team Technical Operations

The field monitoring equipment had already been set up and checked in advance of its arrival at Mineral. Hence, setup procedures were not observed. However, it is evident from the operation of the equipment that it had been set up properly.

During the exercise, the teams were called on to take only air samples and gamma readings at just a few locations. Proper techniques were shown for both of these activities. At no time were the teams directed to measure radioiodine levels in the air, or to collect soil, vegetation or water samples. Inclusion of these activities and deployment to a greater number of monitoring locations would have made more effective use of the field teams.

The air samples collected by three teams at different points and times were collected by one roving team to transport to the Mobile Lab at Mineral. While this procedure did serve to keep all but one team available in the field, it also induced delays of up to forty to fifty minutes after samples were taken before they arrived at the lab.

IV. Field Team Communications

Radio contact was established between the field teams, the Mobile Lab, and the Field Team Controller at the EOF. Radio contact was maintained throughout the exercise. However, there were long periods (twenty minutes or more) during which no communication to the field teams from the EOF Controller was forthcoming. These periods left the teams idle and without current knowledge of on-site and off-site activities.

Some backup radio systems were present, though not uniformly in all vehicles, and they were not operated for two-way communications in this exercise.

V. Field Team Exposure Control

The State/local radiation monitoring teams were provided with protective equipment, including anticontamination suits, boots, gloves, tongs and respirators. The teams were provided with supplies of potassium iodide. As regards to the use of KI, the field team members indicated that the administration of KI would be by directive

via radio from the Emergency Operations Facility. The teams were provided with both low-range (0-200 mR) and high-range (0-200 R) dosimeters, as well as a dosimeter charger and record keeping cards. However, some of the dosimeters in use exhibited erratic and spurious readings. Field team members also had permanent record dosimeters (TLDs and, in some cases, film badges). The team members were knowledgeable as to how often to read and record their dosimeters. The maximum dose allowed without authorization reported by one team was very conservative low value (10 mR), a value far lower than the dose limit in the State plan. Team members indicated they would call in on the radio for instructions if they received an excess dose. As regards procedures for decontamination, team members also responded that a radio call would be made for instructions.

IV. Scenario

The radiological scenario was apparently sufficient to have driven effective exercise play by the field teams. However, the field team controller at the EOF did not exercise the teams as fully as could have been justified by the scenario (e.g., by monitoring a larger number of points, taking radioiodine measurements, taking water, soil or vegetation samples).

Also, the graphs provided to the teams from which to read off-site releases were awkward to use, and added unnecessary confusion. A graph or table of readings directly in mR/hr would have been preferable.

State/Local Radiological Monitoring Teams Deficiencies/Recommendations

1. Field teams should be briefed with regard to meteorological conditions by the EOF prior to their deployment to the field; local team members should be briefed concerning their responsibilities.
2. Communication should be maintained between the field teams and the EOF throughout the course of the exercise as to team locations, plant conditions, etc.
3. It is recommended that the joint teams expeditiously prepare for field deployment upon arrival at the staging area to allow for immediate deployment upon direction from the EOF.
4. Additional training should be provided to team members with regard to decontamination procedures, maximum dose allowed without authorization, and instructions regarding procedures to be followed if dose limits are exceeded.
5. Consideration should be made for more extensive use of the field teams' capabilities, i.e., the monitoring of additional locations and a greater variety of samples, including water, soil and/or vegetation.

Agricultural Sampling Teams

The field sampling teams were mobilized in an adequate manner. For the purpose of this exercise the food and milk sampling teams were deployed from different locations and a meeting place was pre-determined at the Louisa Safeway Store to meet with the Federal Evaluators.

The time of departure from the Safeway Store was 1633. Arrival time at the E. A. Terrel Dairy Farm, Louisa County, was 1650. The milk sample collection process was completed at 1718. The food sampling team was met at the Safeway Store, Louisa, at 1730. The food sample was taken at the store at 1745. The food sampling team received the milk sample from the milk sampling team at the Louisa store and transported both samples to the Division of Consolidated Laboratory Services in Richmond, Virginia, arriving at 1900. Field team representatives were familiar with the local area.

Food and milk sampling teams were briefed on exposure control and equipment check procedures. Both teams were well aware of their responsibilities and successfully carried them out. A complete and current call-up list was observed; field team mobilization was accomplished in a professional and timely manner.

The milk sampling team used a large mouth plastic container to catch milk and then poured it into a plastic container with a screw-on lid. This container was labeled with the day's date, the name of the dairy farm and the type of sample.

The food sampling team placed five pounds of kale in an elongated plastic bag and tied it at the top to seal the opening. Labels were placed around the tie and these labels indicated the day's date, name of store and type of sample. The food sampling team also completed the COV Department of Agriculture and Consumer Services' "Sample and Collection Report".

The equipment used by the field sampling teams to collect various samples was adequate and in accordance with the written departmental SOPs. Each of the sampling teams has written copies of the SOPs in their vehicles.

There was no radio communication established with the field sampling teams during the sample collection process. Field sampling team vehicles were not equipped with two-way radios. On discussing communication procedures with field sampling representatives, it was learned that they would maintain communications with Richmond through a periodic telephone call-in process. Field sampling teams should be provided with two-way radios in their vehicles to keep team members updated and informed of significant activities while working in the field.

The field sampling team members had the following equipment:

Protective Clothing

Rubber boots
Rubber gloves
Coverall boots
Cloth coveralls
Tape
Written procedures

Dosimetry Equipment

Radiological Dosimetry Charger-
CDV 750
CDV 138-Personal Dosimeters (high)
CDV 742-Personal Dosimeters (low)
TLDs
Extra battery

The equipment did not include radiological record keeping cards. These cards should be issued to the team members in order to allow proper protective action procedures.

The sampling teams were aware of dosimetry reading and decontamination procedures and knew the locations of decontamination centers. KI was not included in the field sampling team equipment package, although team members were aware of proper KI use.

Agricultural Sampling Team Deficiencies/Recommendations

1. Field sampling teams should be provided with two-way radios in their vehicles to permit timely exchange of information.
2. Record keeping cards should be issued to sampling team members along with other dosimetry equipment.

Red Cross District Office - Fredericksburg

The Red Cross District Office participated fully in the exercise and demonstrated their ability to provide support for food, bedding, comfort and medical supplies. The ARC Chapter Director was fully aware of the details of the exercise and indicated the local availability of resources to support any actual emergency. Primary communications at the district office are by commercial land line; a back-up system is in place with volunteer radio operators.

News Media Center

The Media Center at Mineral, Virginia was adequately staffed by the State Department of Emergency Services (DES). It was the primary center for coordination and release of information by the State. The State DES had liaison persons at the Utility Corporate Headquarters Media Center and at the State EOC in Richmond. The Public Information Officer (PIO) and staff are well-trained and capable individuals. Mobilization is by call-up list and has been adequately demonstrated many times. For this exercise, a shift change was not actually demonstrated. Twenty-four hour staffing capability was demonstrated via presentation of a roster.

Facilities at the Media Center showed improvement over the last exercise in that new and better furniture was provided and more phones were available. There were adequate displays available for the media. However, the organization of the facility could be improved by providing a segregated

working area for the Public Information staff away from media representatives. Representatives from one TV station, three newspaper reporters and one radio reporter were at the Media Center. There were a number of telephone interviews with reporters and with the Virginia Radio Network who called into the Media Center.

Speaker phones were installed for communications between the two Media Centers (Mineral and Corporate Headquarters). They worked well in the coordination of joint media briefings which were held hourly. Communication systems at the Media Center included a dedicated land line, commercial telephone and a telecopier.

The North Anna Network, a computer-assisted response system, consisting of eleven computer-printer terminals, was installed to provide rapid information distribution and receipt. The system will be a great asset in an emergency response situation provided the users are adequately trained. The computers were used for training during the exercise. Information coordination, receipt and dissemination was by telephone during most of the exercise. Hard copy was not available until late in the exercise.

The Media Center was notified of Alert at 1348, Site Area at 1643, General Emergency at 1755 and of the recommended ten mile evacuation at 1755. (It is noted that General Emergency occurred at 1726.)

In several instances the Utility disseminated news releases prior to the event and without proper coordination with the State PIO. For example, news release number five at 1705 advised of a General Emergency occurring at 1726.

The Utility has reportedly mailed to all residents in the ten mile EPZ a calendar which contains emergency planning information.

News Media Center Deficiencies/Recommendations

1. The Department of Emergency Services should review information flow processes to the News Media Center to ensure the timely transmission of information regarding escalation of plant status classifications.
2. It is recommended that a working area be set aside for PIO staff use, secluded from the media briefing area.

Caroline County EOC

I. Activation and Staffing

Permanent full-time staff of the Caroline County Department of Emergency Services, including the County Coordinator and County communications personnel, were on duty at the EOC when calls were received at 1336 and 1402 from VEPCO advising the County of an Unusual Event declaration at 1318 and an Alert declaration at 1402. Those calls were received on the Distaphone, which is continuously monitored in the County communications room. These calls were verified on the statewide communications network, WCDN. Staff

mobilization procedures were demonstrated during the Alert phase. Written call lists were used with all EOC staff contacted promptly. Organizations alerted and reporting to the EOC included the following: Public Information Officer, Traffic Control (State Highway representative), Red Cross, County Health Department, School Board, Social Services, Fire and Rescue, and State Police. The Sheriff's Office, which provided EOC security, supplied deputies in addition to the officers directing the EOC communications center. The EOC was staffed by approximately 1520.

The system for notification and activation of EOC staff is well established and can be implemented at any time. The participating staff displayed adequate training and knowledge. Round-the-clock staffing capability was demonstrated by a combination of double staffing, shift change and presentation of a roster. Incoming staff were briefed appropriately.

II. Emergency Operations Management

The County Emergency Services Coordinator, as designated in the Caroline County REP Plan and SOPs, was effectively in charge. The County Supervisor who serves as the County Director of Emergency Services was present and actively involved in decision-making as appropriate, e.g., at declaration of local state of emergency. Periodic briefings, mainly after upgrades of emergency classification levels, were held to update staff on the situation. There appeared to be, however, a paucity of information available to the County concerning plant status, off-site radiation releases, etc.

EOC staff members had SOPs and checklists available and actively consulted them throughout the exercise. Message logs were kept and messages reproduced and distributed where appropriate. Some incoming and outgoing phone messages, for instance the Coordinator's relay of the evacuation order to the County EAC and route alerting personnel, were not logged. There were, however, no problems observed resulting from messages not being logged.

Access to the EOC was controlled. However, an alternate entrance designated for use by the public or media seeking information was left unmonitored for periods of time because of the absence of actual public or media inquiries.

The EOC was notified of Alert status at NAPS at 1400, of Site Area Emergency at 1644 and of General Emergency at 1732. The evacuation order was received and immediately relayed to the route alerting team and other County field organizations at 1806. Radiological monitoring teams, the evacuation assembly area, the route alerting team and the school bus driver(s) were activated at appropriate times.

III. Facilities

The EOC is a quite adequate facility for response to an emergency at NAPS. It is equipped and used for response to a variety of emergencies of short and long duration. Emergency classification levels were posted. However, no status board was used. Maps of the plume EPZ, evacuation routes, relocation centers, access control points, radiological monitoring grids and population (no more than 100 in the plume EPZ) were all posted.

IV. Communications

Communication facilities in this County were good. The County made very good use of RACES by having them serve as the primary net for the EAC. The RACES operators were also used to establish a high frequency relay net between Fredericksburg and Richmond. This was necessary due to Fredericksburg being unable to contact Richmond directly.

The County Fire and Rescue nets, State Police radio, teletype nets, and RACES were all used to provide back-up communications support for the Instaphone. The Virginia Criminal Information Network (VCIN) was used to provide transmission and receipt of teletype hard page copy between the EOC and surrounding EOCs.

All traffic between the power station and the EOC was recorded on proper message forms. The traffic was logged in and out through a message control station within the EOC, which keeps a log on all message traffic.

V. Dose Assessment and Protective Action Recommendations

Local radiological monitoring teams were mobilized and dispatched at about 1800 at the direction of the County EOC. The team assembled, checked its equipment and was apprised of the situation at the North Anna Power Station. The rescue squad depends on the County dispatch system for a communications base; members have portable radios on which they can be contacted.

A Health Physicist from Virginia Commonwealth University Medical College was contacted by the State to assist Caroline County. He reviewed the equipment and personnel at the rescue squad headquarters and did an operational check of the equipment. The SOP is well-developed and there are adequate copies available. The primary assignment of the County monitoring teams is to monitor background and surface radiation; air, soil and milk sampling is the responsibility of State teams. The teams did not detect or simulate detection of more than background radiation. All dose assessment and protective action recommendations came from the State. The use of KI was not recommended by the State nor did the County teams encounter any situation that could call for such use.

VI. Public Alerting and Instruction

The EOC directed the Ladysmith Fire and Rescue Company to conduct route alerting upon activation (simulated) of the NAPS siren system. This directive was precipitated by a call from the State EOC at 1806. The alerting team began its route immediately. During the route alerting procedure, a rescue squad ambulance went in the front of the evacuation school bus. The vehicle's PA system was used to announce the status of the situation as an exercise and that the bus was for the purpose of evacuating the people in the event of a real emergency. The bus went by every house in the EPZ in fifty minutes.

Prescribed emergency public instructions are prepared in this EOC for both exercises and for actual emergencies. For this exercise the message used advised residents that an exercise was actually taking place. The area covered by route alerting in Caroline County contains only about twenty-five households, all of which have been provided with extensive information and directions regarding what to do and where to go in the event of an emergency at NAPS.

VII. Protective Action

A. Evacuation and Access Control

Activation of traffic control points was promptly ordered. One of the two access control points listed in the County SOP was manned. Barricade materials were delivered to pre-designated sites (Routes 738 and 671, 738 and 669). Because of the limited extent of the County's portion of the EPZ and the small number of roads leading into it, there is no question of the County's capability to control access to contaminated areas.

The Evacuation Assembly Center was activated at the appropriate time and was prepared to accept evacuees. There are currently no mobility impaired individuals in the area. Again, because of the small size of the area and the close-knit nature of the community, there is little likelihood of anyone having a transportation problem being overlooked.

B. Implementation of Ingestion Pathway Protective Actions

There were no discussions of ingestion pathway protective actions at the County EOC and no communication from the State EOC observed.

VIII. Radiological Exposure Control

Radiological exposure control was conducted from the Ladysmith Volunteer Fire Department station in Ladysmith. Emergency workers had adequate personal detection equipment. The SOP is well organized. The worker exposure sheet is well-developed and keys into the SOP. However, adequate protective clothing for team members was not available. This equipment is stored at the EOC in Bowling Green and would presumably be distributed in the event of a real emergency.

IX. Media Relations

Provisions were made at the EOC for press briefings. However, no press took advantage of these provisions and no briefings were actually held. A rumor control phone number was established.

X. Recovery and Reentry

The evacuated area of the County was secured by means of access control immediately upon evacuation. Other than awaiting direction from the State EOC to terminate the exercise, no recovery and reentry activities were observed at the County EOC.

XI. Scenario

The scenario was adequate to test essential elements of the County's radiological emergency response plan.

Caroline County EOC Deficiencies/Recommendations

1. One access point to the EOC designated for use by the media was left unmonitored for an extended length of time. Arrangements should be made to prevent this in future exercises and emergencies.
2. The State EOC did not initiate any discussion with the County regarding ingestion pathway protective actions. In the absence of such a State initiative, the County should have sought information concerning recommended ingestion protective actions.
3. All significant incoming and outgoing EOC messages should be logged. Significant on-site and off-site events, including emergency classification levels, should be posted and updated in order to enable newly arrived staff to quickly orient themselves as to the status of the emergency response.
4. Protective clothing was not available to County emergency workers in the field. Some of this type of equipment, which is available at the County EOC, should be prepositioned at a more convenient location.

Caroline County Evacuation Assembly Center

I. Activation and Staffing

The Caroline County Evacuation Assembly Center is located in the Ladysmith Elementary School. The Director of the Center is the principal who has administrative control over the facility under normal and emergency conditions.

The center was staffed by the following organizations with these respective numbers:

- ARC (4)
- RACES (2)
- Social Services (3)
- Rescue Squad (5)
- State Police (1)
- County Sheriff (1)
- Director (1)
- Custodian (1)

The staff members reported to the EAC as they were called by their counterparts. The staffing is adequate for the twenty-five families designated for this shelter (approximately 100 people). Most could be processed in two to three hours. Twenty-four hour staffing would be reduced to accommodate feeding, caring for informational needs, and other social services. Second shift staffing is available, including the position of the Director.

The activation went smoothly as the Director assigned and reviewed responsibilities for each staff member as he or she reported to the EAC. About one-half of the rescue squad personnel have had training in radiological emergency response. The State Trooper is an instructor in such emergency response and he carries a monitoring device and protective clothing routinely.

II. Registration and Monitoring of Evacuees

Only three or four persons were processed during the exercise. Most staff knew their responsibilities and those who were new to EAC operations were briefed by those who had staffed the center previously. The registration forms are stored at the school and were available for the volunteers. The design of the form appears to be efficient.

A monitoring exercise was demonstrated on the four volunteers. The staff followed a written SOP. A team from the rescue squad, trained in radiological monitoring, performed the actual monitoring; they have adequate equipment.

If a person is found to be contaminated, he or she can be decontaminated at the school and provided a clean change of clothing. The school has a showering facility, storage rooms and adequate space to define clean or contaminated spaces without compromising the ability to shelter the 100 people.

III. Congregate Care of Evacuees

The center is more than five miles from the EPZ border. It can handle the 100 persons provided for in the plan. There are two other schools which lie farther out of the EPZ which could be used for

overflow. The County EOC would be notified if these facilities were needed. The ARC volunteers appeared capable of providing feeding for the evacuees and support staff on a twenty-four hour basis. The school has sufficient kitchens, bathrooms and other facilities for sustained holding. Communications, which included telephones, RACES, as well as rescue squad portable and vehicle radios, all were operating properly.

Decontamination Activities

The Ladysmith School is the only decontamination point for emergency workers and evacuees from the EPZ of Caroline County. The volunteer staff demonstrated the ability to monitor for contamination and procedures for decontamination of persons. They operated a separate entrance to locate potentially contaminated vehicles. The school grounds are adequate for this activity; inside this area is controlled. Anyone contaminated can be sent to the showers and receive clean clothing before entering the clean area. Any contaminated clothing is stored in drums which can be isolated from the building. The EOC would arrange for disposal. The shower area would be continuously flushed until it was contamination free.

Hanover County EOC

I. Activation and Staffing

The Hanover County EOC is tied in to the Utility via the Instaphone system, an extension which is located in the County Central Dispatching Point. A call was received by the County from the North Anna Power Station at 1644 (Site Emergency), initiating activation at the EOC. Mobilization procedures were demonstrated through the use of a written call-down list. Most staff members reported to the EOC within one-half hour; staffing was completed in less than one hour.

The EOC was fully staffed by the Coordinator of Emergency Services and his deputy, and representatives of RACES, the Red Cross, schools, State Police, Sheriff, Fire Department, RADEF Officer, Social Services, Health Department and State Highway Department. The staff was highly professional in all aspects of the emergency response, displaying excellent knowledge of emergency response procedures in general and radiological emergency response procedures in particular.

Round-the-clock staffing was demonstrated through the presentation of a roster and, in several cases, double staffing. These individuals maintained the high quality of the County's emergency response demonstrated by the primary individuals.

II. Emergency Operations Management

The Coordinator of Emergency Services was effectively in charge of emergency operations, as called for in the plan. He was replaced during the exercise as part of a shift change by his designated alternate. Periodic briefings were conducted to update the staff on

the current situation. As different problems arose concerning particular areas of expertise, the appropriate staff members were consulted prior to decision-making.

Copies of the Hanover County Radiological Emergency Response Plans were available which included written procedures and checklists for the various response areas.

Messages were recorded and delivered to the Coordinator who officially logged them and, if action was required, read them aloud and then posted the message.

Security was not strictly enforced, although every access point to the EOC was locked except the main entrance, where a sign-in sheet was posted. A Sheriff's deputy, by plan, would normally be stationed at the EOC entrance.

The Alert message was received by the County at 1400 (declared 1340), Site Emergency message at 1644 (declared 1637) and General Emergency message at 1732 (declared 1726). At 1759 the County was informed that the Governor had declared a state of emergency and that an evacuation of the ten mile EPZ should commence. The Evacuation Assembly Center was activated at Site Emergency, while the County's radiological monitoring team was activated at General Emergency.

Elected officials were not present or involved in decision-making during the exercise.

III. Facilities

The Emergency Operations Center for Hanover County provided sufficient space and furnishings for efficient and effective operations. The operations room was large and adequately appointed with tables and chairs. Separate adjoining rooms were provided for the computer, the RACES operator, the reception area and two separate work areas. The Media Relations Area was down the hall in a small room about fifteen meters away.

The status board was clearly visible and kept up-to-date on major events by the EMC. The plume EPZ and evacuation route maps were both posted as well. An access control points map was available, but not posted, as was a map displaying radiological monitoring points.

IV. Communications

Overall communications capabilities in this County are sufficient, but they should be put to better use. During the last exercise it was recommended by FEMA that a drop off the Instaphone, used for primary message traffic, be put in the EOC to relieve confusion. This installation still has not been completed. Until this is done the possibility still exists that messages from the EOF or State EOC will not reach the EOC in the exact format in which they were transmitted.

The County had a room set aside for use by RACES operators within the EOC, but they were unable to use it due to equipment limitations. Prior to the County moving into the EOC, a room was available across the street for RACES operations. The antenna and coax cable are still mounted at the old location. The County should either extend the cable into the new operations area or move the antenna to the roof of the new EOC and run the cable into the EOC.

The room being used as the operations room had no telephones. There were three phones available in offices located throughout the EOC, but should something happen during normal duty hours these phones will be used for normal County operations. Across the street in the dispatch office was a room that is normally used as the EOC. In this room there were four telephones, put there to handle EOC traffic. If the County is going to continue to use the room they used for this exercise, consideration should be given to having the four telephones appear in both locations. The current situation is for incoming calls to go to the phone numbers in the new EOC area, which has no back-up power. Should the commercial power fail, everyone would have to move over to the old EOC in the dispatcher's building, which does have back-up power. When this occurs, the County is using four different phone numbers. Unless the County calls everyone to give them the new numbers, no one will know where to call. With the four phones in both locations, it would not matter from which building they operate.

The County did have sufficient back-up communications and made good use of message forms.

V. Dose Assessment and Protective Action Recommendations

Dose assessment activities not observed at this EOC.

VI. Public Alerting and Instruction

According to the plan, the EOC will alert the public only in the event that the sirens fail. However, plans for completing route alerting should be reviewed, as the EMC was unaware of how many vehicles would be needed, the path that would be followed; a prescribed message should also be drawn-up for route alerting teams.

The staging area team was placed in standby status at 1732 when the Site Emergency was declared. The State simulated the activation of the sirens and EBS at 1759. The staging area team was contacted by the EMC to stay on standby for other duties.

As indicated above, the staging area team would conduct route alerting only if the sirens failed. The teams would use fire and police emergency vehicles equipped with PA systems to warn the people.

VII. Protective Action

A. Evacuation and Access Control

Activation of the traffic control points was promptly ordered at 1759, following the Governor's State of Emergency declaration. Two traffic and access control points were observed during the exercise. State Police personnel arrived promptly at their locations and were familiar with the proper evacuation routes. Communication with the local EOC, personnel at the other control points and at the local staff assembly areas are accomplished via State Police radios.

Procedures for clearing traffic obstructions were not observed but, according to participants, tow trucks are available if necessary. Due to the limited width of the road, it is next to impossible to keep a lane (no shoulder exists) for emergency vehicles.

The EAC was opened at 1644 with the declaration of Site Emergency. At 1732, with the declaration of General Emergency, the Emergency Management Coordinator notified the EAC to proceed to the fully-operational mode as soon as possible. This was accomplished at 1806.

B. Special Evacuation Problems

The County Social Services Department has compiled a list of all mobility impaired individuals in the area. This list details their special needs, their location and the type of rescue vehicle that would be required. Contingency arrangements have been made for such vehicles.

None of the operating County schools fall within the EPZ. However, should this change, it is expected that an adequate supply of emergency radio-equipped buses and drivers would be available.

VIII. Radiological Exposure Control

Emergency workers were supplied with CDV-138s and CDV-742s (self-reading dosimeters), dosimeter chargers, record keeping cards and permanent record devices (TLDs). Although the plan calls for emergency workers to check their dosimeters routinely, the RADEF Officer, when questioned on this point, thought that readings only needed to be taken when entering or leaving the EPZ. However, readings were actually taken by emergency workers every half hour and recorded although the workers were not familiar with the maximum dose allowed without authorization. All workers were quite familiar with proper decontamination procedures and the location of the Decontamination Center.

An adequate supply of KI is maintain at the County EOC and would be issued to emergency workers if the projected dose to the thyroid is expected to exceed 12 rems. Authority to issue potassium iodide rests with the Health Department.

The RADEF Officer is aware of the maximum dose allowed without authorization and of decontamination procedures, both of which are contained in the County plans.

IX. Media Relations

A small room down the hall from the EOC was designated for media relations activities. No briefings were actually given during this exercise, though during an actual emergency, press from two local newspapers, several area television and radio stations and other concerned parties could be expected. The County Public Information Officer would present statements prepared by the Emergency Management Coordinator, augmenting the briefings with the posted maps.

X. Recovery and Reentry

Recovery and reentry was not demonstrated.

XI. Scenario

The scenario provided Hanover County with a sufficient test to display their capability to respond to a radiological accident at the North Anna Power Station. The messages inserted by the Office of Emergency Services gave the County additional opportunity to deal with other situations that could arise during an emergency.

The field activity scenario provided all personnel with sufficient activity in the areas of traffic access and radiological exposure control. Traffic access control was so realistic that many motorists stopped to ask if the roads were actually closed.

Hanover County EOC Deficiencies/Recommendations

1. Security should be more fully demonstrated during future exercises.
2. Elected officials should take a more active role in future exercises.
3. The antenna cable for the RACES equipment had been severed, requiring the RACES staff to operate from their vehicle outside of the building, somewhat delaying the receipt of messages.
4. If the County continues to use the operations room used in this and past exercises, a drop off for the Instaphone and additional telephone lines should be installed at the EOC.
5. The EOC staff needs to better develop their plans for route alerting. The EMC is unaware of how many vehicles would be needed or the path that they would take. Also, a prescribed message needs to be developed that these teams will broadcast. It is recommended that they alert the residents to tune to their EBS station for any and all instructions.

6. The RADEF officer should refamiliarize himself with the procedures established for emergency worker radiological exposure control.
7. Emergency workers should be fully briefed on the maximum dose allowable without authorization
8. A larger room providing seating for anticipated press representatives would better accommodate media functions. Additional maps, such as the EPZ and Evacuation Route maps would be extremely helpful in accomplishing more effective briefings.

Hanover County Evacuation Assembly Center

I. Activation and Staffing

The Evacuation Assembly Center (EAC), located at the Patrick Henry High School in Ashland, Virginia, is the designated EAC for both Hanover and Louisa Counties.

Activation of the EAC was essentially complete by 1800, with additional personnel arriving until 1900. Sufficient staff, with varying responsibilities (Red Cross, Fire Department, etc.), were in attendance to take care of most conceivable situations. If necessary, twenty-four hour staffing would have been accomplished by two 12-hour shifts which would be activated and arranged by the Director of the EAC.

II. Registration and Monitoring of Evacuees

Registration and monitoring of evacuees was handled in a professional manner. The entry to the EAC was cordoned into two pathways; one for male evacuees and one for female. This permitted separate monitoring and, through the use of the boys' and girls' locker rooms at the EAC, decontamination through stripping and showering of both sexes. After monitoring and decontamination, evacuees were then registered into the EAC. Monitoring was accomplished by four teams of two people each. Two teams were stationed at the entry way to the EAC and two teams at the showers for post-decontamination check.

III. Congregate Care of Evacuees

Congregate care at the EAC was explained but not actually demonstrated vis-a-vis assembling of cots, blankets, etc. Facilities seemed adequate to handle several hundred evacuees, with an additional school located approximately 300 yards away as a back-up location for overflow. Although no nursing station was formally established, a nurse's facility exists at the EAC, and both Red Cross and Hanover fire personnel were versed in first aid. For serious medical cases, a "crash" truck was located adjacent to the EAC during the exercise and could aid and transport any seriously injured people.

IV. Scenario

The scenario was adequate, providing enough activities for all participants.

Decontamination Activities

On the whole, decontamination procedures were carried out in an orderly and professional manner. Two decontamination stations were observed; (1) field monitoring personnel station at the Beaverdam Quik-Stop, and (2) an evacuee station at the Patrick Henry High School. Beaverdam Fire Department personnel properly established an isolation zone and used CDV-700 monitors to check personnel, equipment and vehicles. After checking, personnel were carefully allowed to leave the isolation area.

At the EAC, the same monitors were used to check incoming evacuees. Evacuees were not allowed off of a paper pathway taped onto the floor until they had been checked and decontaminated, if necessary. It should be pointed out that no actual decontamination of people/vehicles were observed since actual readings indicated no contamination. Teams at the EAC were sufficient to process the expected numbers of evacuees.

Louisa County EOC

I. Activation and Staffing

Activation of the EOC and mobilation of the staff occurred efficiently and in accordance with the plan. The Alert notification call, which initiated activation, was received from the North Anna Power Station (NAPS) at 1402 via the Instaphone. Verification was not required. Dispatchers in the County's Emergency Communications Center used a call list to notify the appropriate County emergency officials. Staffing was completed at about 1500, and at 1505 the Coordinator announced that the EOC was activated.

The EOC was fully staffed as specified in the plan. The County Office of Emergency Services (OES) was represented by the Coordinator, Assistant Coordinator, Radiological Officer, and Public Information Officer. Other organizations represented included the Sheriff's Department, Health Department, Superintendent of Schools, Public Welfare Department, State Police, Highway and Transportation Department, Information Technology Department, and the Chairman and Vice Chairman of the Board of Supervisors. The staff generally displayed adequate training and knowledge. A shift change, for the most part, was simulated, but capability for round-the-clock staffing was demonstrated by presentation of a roster.

II. Emergency Operations Management

The OES Coordinator was in charge of operations at the County EOC. The OES Director, who is also the Chairman of the Board of Supervisors, was also present throughout the exercise.

Periodic briefings were held to keep the staff updated on the developing situation. Copies of the plan and written SOPs were available and referenced. Message logs were kept, but message forms were not used for message distribution. EOC security, enforced by Sheriff's Deputies, was very tight.

The EOC received notification of events as follows:

Plant at Alert Status	1402
Plant at Site Area Emergency	1644
Plant at General Emergency	1732
Governor's Emergency Declaration and Evacuation Directive	1750

In the early stages of the exercise, appropriate actions were taken to coordinate emergency activities. Being the "parent" county, Louisa responded promptly to the Utility's requests for fire and rescue units. Calls were placed to neighboring risk counties to check communications and establish initial coordination. County officials wisely deployed the radiological monitoring teams at the Alert stage, which is earlier than specified in the plans. This was in response to a NAPS report that a release was in progress, and that Utility monitoring teams had been dispatched off-site.

After receiving the Governor's evacuation directive, County officials delayed implementing the action for about thirty-five minutes. This was apparently due to the fact that the State's decision to evacuate the entire ten mile EPZ was not based upon or supported by the simulated scenario conditions, but was an administrative maneuver designed to demonstrate capability in all five risk counties. When they received the evacuation directive at 1750, County officials recognized that the wind direction and speed, which had remained constant, resulted in the release affecting only a small portion of the County. They were reluctant to implement a total EPZ evacuation, eventually consulted with Hanover and Spotsylvania Counties, and finally commenced the evacuation at 1825.

While it is understandable that the County officials questioned the appropriateness of a full evacuation under these circumstances, their failure to promptly contact the State EOC for clarification resulted in a thirty-five minute delay in implementing the evacuation. County officials must recognize that when the Governor's protective action directive has been announced publicly, the public will respond. In order to minimize public confusion, the County must implement appropriate response actions promptly and in coordination with the other affected jurisdictions.

The exercise revealed another issue which, although it did not result in a deficiency, should be resolved in order to assure coordinated response in the future. County officials were virtually unanimous and definitely adamant in their belief that the siren system and EBS should be used to provide early warning to the public, preferably at Site Area Emergency. They appeared to come close to carrying through

with a unilateral decision to activate the sirens at that time. Fortunately, they requested authorization from the State EOC, and ended up following the plan procedures and State instructions which utilize the siren system as a means of alerting the public at the time of a protective action decision. It is recommended that State and County officials address this issue to effect a resolution.

III. Facilities

The EOC provided adequate space, furnishings, lighting and telephones to support the assigned staff. Maps depicting appropriate information were either posted or available. A status board, per se, was not used. Classification levels and other significant events were posted on a status log consisting of a piece of tablet paper. This could not be read from more than several feet away, and provided only the most basic information. For the benefit of the staff, it is recommended that a large, clearly visible status board be maintained with more complete information.

IV. Communications

Communications capabilities at Louisa County are very good. The Instaphone is used as the primary means of communicating with the State EOC and the EOF. Back-up communication is provided by RACES, telephone and the Virginia Criminal Information Network (VCIN). The primary link to the radiological monitoring teams was by the County fire radio network.

After the last exercise it was recommended that the County make better use of the RACES net. The traffic that RACES handled during this exercise was adequate to test their equipment and procedures, although it was not used extensively for EOC traffic. The County operators did pass several radiological readings to the RACES operator at the State EOC, and established two relay nets - one at Charlottesville and the other at Kentstore, to relay traffic for other RACES operators. They also established a back-up simplex radio net linking the Louisa County EOC with the EOF and State EOC, in case the primary link between the EOF and State EOC failed.

The County has a primary telephone link to the Media Center, but had no back-up. The facsimile machine at the EOC was not operational. The County PIO did not know why it was not being used, nor was he familiar with its operation. Capability for the exchange of hard copy of news releases should be established, and someone trained in the use of the equipment should be available at all times.

V. Dose Assessment and Protective Action Recommendations

Louisa County demonstrated very good capability to contribute to the dose assessment effort by deploying a total of five radiological field monitoring teams. One of the teams was later assimilated into a joint State/local team. The movements of the four local teams were

directed by the Radiological Officer (RO) from the County EOC. All field readings obtained at the pre-designated monitoring points were recorded, plotted on a map and reported to the State EOC by the RO.

The five teams were dispatched from the Louisa, Mineral, Bumpass, Hollygrove and Blue Ridge Shores Fire Companies. The teams were dispatched during the Alert by the Louisa County Radiological Officer. Before departure the teams were read their equipment check procedures, told of the current plant conditions and told to follow exposure control procedures. All of the local monitoring team members were at their respective fire companies when the activation call was received. The County's fire tone alert system is utilized as the means of notifying team members to mobilize.

The local SOP lists the equipment available for the monitoring teams. Of the two monitoring teams observed, both had all the equipment listed. The function of the local teams is limited to taking geiger counter readings at specific check points. No air sampling, ground or water sampling is required of the team. However, during this exercise, on special request by the State, the taking of a water sample from Lake Louisa and delivering it to the State team at North Anna was completed, but not observed. The equipment available was appropriate and adequate for their roles.

The local teams made use of the local SOP's for their set-up and operation. These SOPs were reinforced during activation when they were read to the teams from the Louisa EOC by the Radiological Officer. One team member was observed taking readings with the meter at waist height. It is recommended that readings also be taken near ground level. The monitoring teams were familiar with all of the monitoring locations, although they have been changed from the original plan.

Radio contact was maintained with the monitoring teams throughout the exercise, and no problems were observed with the equipment. However, the team members did not report their dosimeter readings on a regular basis. It is recommended that the Radiological Officer obtain and record this information periodically to assure that team members are not inadvertently exposed.

VI. Public Alerting and Instruction

All aspects of activating the primary alert and notification system were simulated by officials at the State EOC with no prior coordination with Louisa, the primary activation location. The County received a message at about 1800 advising that the State EOC had simulated activating the siren system and EBS at 1759.

After deciding to implement the evacuation at 1825, the County officials initiated simulated route alerting throughout the EPZ portion of the County. The simulated route alerting was performed by the Sheriff's Deputies using PA-equipped cars. According to the Sheriff, they would have broadcast a message advising people that an evacuation had been declared, had this been an actual event.

VII. Evacuation and Access Control

Sixteen Access Control Points (ACPs), sufficient to block access to the entire Louisa County portion of the EPZ, were established at the ten-mile boundary. Barricades and signs were delivered to each ACP during the Site Area Emergency phase by the Highway and Transportation Department. The Sheriff's Department and State Police made arrangements for the manning of four ACPs, corresponding to the evacuation time. According to these representatives, they have ample personnel and resources to activate all necessary Access and Traffic Control Points, should it be necessary.

The four ACPs designated for manning were observed, but one position, which was the responsibility of the Louisa County Sheriff's Department, was not manned at the time of the observer's visit. The other three positions observed were manned by the State Police. All personnel were familiar with the evacuation routes and the location of the evacuation assembly center. Personnel had low and high-range pocket dosimeters, TLDs and record keeping sheets, although in one case the sheet was completely blank and one trooper did not have a TLD.

Actions to activate the joint Louisa-Hanover Evacuation Assembly Center (EAC), located in Hanover County, are coordinated at that location. The EAC evaluation is included in the Hanover County section of this report.

Evacuation of on-site personnel was demonstrated during the Site Area Emergency phase. At the Utility's request, the County Sheriff's Department established a Traffic Control Point at a key intersection.

The County demonstrated the capability for evacuating residents without their own means of transportation by running two of the ten pre-established bus evacuation routes. The other eight routes were simulated. The buses picked up volunteer "evacuees" and proceeded to the EAC.

Evacuation of schools was not a consideration during this exercise for two reasons; the evacuation took place well after normal school hours, and the Superintendent of Schools simulated closing the schools at the Site Area Emergency phase. There are no other special facilities located within the Louisa County portion of the EPZ. Lists of handicapped and others needing special assistance were not available at the EOC. According to the staff, the Welfare Department maintains such lists and is responsible for arranging transportation.

VIII. Radiological Exposure Control

All emergency workers observed (local monitoring teams and manned traffic and access control points) had low-range and high-range pocket dosimeters. All emergency workers, except for one State Trooper, had TLDs. The monitoring teams appeared to be making

regular checks of their dosimetry and recordings of readings on to a log sheet. In one case, a State Trooper showed his log sheet with no readings marked on the sheet, nor any other information (e.g., initial readings when the dosimetry was signed out).

Because the exercise did not provide for the insertion of high readings on any of the emergency worker dosimetry, it is difficult to evaluate what actions would have been taken if an emergency worker approached or exceeded the exposure limits. Although the County Radiological Officer had firm criteria for removing workers from the field, the workers were generally aware of the fact that they should inform the County Radiological Officer of any unusual readings on their pocket dosimeters, but not of a specific maximum dose. The State and/or County may consider in the construction of the scenario for the next exercise to include play where an emergency worker is told that he has a high dosimetry reading.

Provision of KI for emergency workers in the field was simulated. County officials reportedly had an adequate supply (not observed) and that only the Health Department can authorize the use of KI. The use of KI was simulated during the exercise based on a recommendation by the State and authorization by the County Health Department Director.

IX. Media Relations

The PIO was located in a room adjacent to the County EOC. Although the primary location for dissemination of information to the news media was the Joint Media Center, the PIO reported that this room could be used for press briefings, should it be necessary. During this exercise, however, a lack of media interest precluded this.

Information was disseminated by the PIO to local radio stations via telephone, as appropriate, but this was largely simulated, and hard copy of such information was not prepared. Good coordination and information sharing was demonstrated between the PIO and the Coordinator. The PIO also demonstrated capability for rumor control.

Capability for the exchange of hard copy of news releases among the County, State and Joint Media Centers was not available at the County. The new computer system could not provide this capability, and the previously-available telecopier was not used during this exercise. Without this capability, coordination of news releases between the County and State PIO's, as called for in the plan, could not be accomplished effectively. Some means for transmitting and receiving hard copy of news releases should be established and used at the County EOC.

X. Recovery and Reentry

In accordance with the exercise objectives, the County's radiological monitoring teams remained in the field, reporting readings, until the State EOC reported that radiation levels were low enough to allow

reentry. This notification was received at the County EOC at 2158. At 2200, the County was advised by the State that the exercise had been terminated. No further recovery and reentry activities were demonstrated.

Louisa County EOC Deficiencies/Recommendations

1. After receiving the Governor's evacuation directive, which EOC staff perceived to be inappropriate, County officials failed to contact the State EOC for clarification, resulting in a thirty-five minute delay in implementing the protective action. In order to assure a coordinated response, thus minimizing public confusion, County officials should contact the State EOC promptly regarding questions on directions or instructions, and protective actions should be completed on a timely basis.
2. County officials strongly favor using the siren system and EBS to provide early warning to the public, preferably at the Site Area Emergency phase. This does not conform to the State's policy, which has been to use the sirens and EBS to alert and notify the public at the time protective actions are announced. It is recommended that County and State officials resolve this issue by developing a coordinated approach towards the use of the sirens and EBS public notification systems.
3. The capability for the exchange of hard copy news releases among the County EOC, the State EOC and the Joint Media Center was not available at the County. In order to permit effective coordination of news releases between the County and State PIOs, some means for transmitting and receiving hard copy news releases should be established and used at this County EOC.
4. Some emergency workers observed in the field were unfamiliar with the radiation exposure limit. Emergency workers should be fully briefed on the maximum dose allowable without authorization.
5. A status log, consisting of a sheet of tablet paper, was posted with only the most basic information, and was not readable from more than several feet away. It is recommended that a large, clearly visible status board be utilized at the County EOC.
6. Route alert teams simulated broadcasting a message which, according to County officials, would have advised residents to evacuate. In the interest of time and clarity, it is recommended that a general, all-purpose message be used, rather than one specifically prepared for a given event. Such a message would advise the public that a power plant emergency had occurred and instruct them to tune to their EBS station(s).

Orange County EOC

I. Activation and Staffing

Upon receipt of notification of the Alert classification at 1402, the Emergency Services Coordinator activated the staffing of the EOC. The EOC was operational by 1410 and staffed by County government representatives, the RADEF Officer and RACES. The State Regional Coordinator arrived following notification of Site Area Emergency. Twenty-four hour staffing capability was indicated by the round-the-clock manning of the Sheriff's switchboard and presentation of a call-up roster.

II. Emergency Operations Management

The Emergency Services Coordinator, the person designated in the County plan, was effectively in charge of emergency response operations. He briefed the staff upon receipt of every message. Because the EOC was engaged in non-exercise related daily activities, access could not be secured until after regular working hours. The EOC was notified of Alert at 1401, of Site Area Emergency at 1644, and of General Emergency at 1759. Support units were notified by the EOC staff in a prompt and efficient manner. Elected officials were present and were consulted in decision-making.

III. Facilities

Because of limited space within the EOC, the Emergency Coordinator elected to have few people physically report to the EOC proper. Exercise participants were, however, readily available at their normal day-to-day offices. Status boards and information were displayed indicating EPZ sectors, access control points, and radiological monitoring points. Information regarding the location of mass care facilities and population in the EPZ was available.

IV. Communications

Orange County is well prepared for any emergency with regard to communications capability. All communications personnel are well briefed and trained on their job responsibilities and equipment functions. The primary link to the EOF, EOC and surrounding County EOCs is via the Instaphone, with RACES and commercial telephone lines as back-up. The Virginia Criminal Information Network (VCIN) was also available for hard copy teletype traffic at the Dispatcher's Office. The County had telephone contact with the Media Center, but had no back-up voice or teletype with this center. Communication between the EOC and the Dispatcher's Office was by commercial telephone. All message traffic was recorded on the proper forms and posted for staff to review.

V. Dose Assessment and Protective Action Recommendations

The local monitoring team was put on alert by the County EOC at approximately 1330; mobilization followed in a timely manner. The team received the calls at their homes and proceeded to pick-up their monitoring equipment at the firehouse. They reported arriving at the station at 1455. The monitoring team leader briefed the staff on all required procedures. The team may be activated by phone and/or by a paging system.

An SOP was used by the team to set up their equipment; team members were well versed in the use of all instrumentation. The members were very familiar with the region, and a map indicating the location of the monitoring stations was available in the EOC.

The monitoring team had available a copy of the County plan, including a listing of equipment required. The team was fully equipped to provide local radiation measurements. Air, soil, vegetation sampling would be accomplished by State monitoring teams. The monitoring team had a continual communication link with the County EOC.

According to the local plan, a telephone located across the street from the monitoring point is the primary communication link with the County EOC. However, for the purpose of this exercise, a radio was used as the primary communication link in order to test this capability. The team was fully equipped with protective clothing and equipment. The team reported that KI would be available from the Health Department, if required. The team was issued adequate dosimetry equipment, and was aware of the proper procedures for its use and the location of the decontamination facility, if needed. It is noted that the field monitoring site is technically located outside the ten mile EPZ. The Health Director was aware of the appropriate procedures in the use of KI and reported that sufficient quantities were available to meet the needs of the County.

VI. Public Alerting and Instruction

Upon being notified of the simulated activation of the sirens and EBS announcement, the EOC staff dispatched a bus to run a pre-designated route. The EOC had prewritten informational messages for local release had they been necessary. Because of the small number of persons who reside within the EPZ, the EOC maintains a list of all families in the EPZ. In an actual emergency, they would be telephoned and the Sheriff's Department would knock on every door to alert the people.

VII. Protective Action

Traffic Control Points were ordered and activated in a prompt manner as were the EAC activities. The EOC list indicated that there were no persons with special transportation needs. Although the State is

primarily responsible for Ingestion Pathway Protective Actions, the EOC staff does maintain a close relationship with the County Farm Agent.

VIII. Radiological Exposure Control

The dosimetry equipment available to emergency workers in Orange County included low and high-range dosimeters with chargers, record keeping cards and TLDs. Workers were adequately trained in the use of this equipment. The County Medical Director was in charge of KI and was familiar with the guidelines for use. The RADEF Officer was familiar with radiological procedures, monitoring and decontamination procedures.

IX. Media Relations

There was no area set aside for press briefings at the County level. A member of the press was invited into the EOC to observe exercise activities. The rumor control function is provided for by the Sheriff's switchboard staff.

X. Recovery and Reentry

When a message from the State indicated the area was safe for reentry, the EOC staff authorized return. No other recovery and reentry activities were demonstrated.

XI. Scenario

In Orange County, the decision to field test the computer tended to interfere with EOC operations in that the computer operator was consistently using the limited telephone lines which were available at the EOC.

Orange County EOC Deficiencies/Recommendations

1. It is recommended that a dedicated line or other direct communication link between the Dispatcher's Office and the EOC be established.

Orange County Evacuation Assembly Center

I. Activation and Staffing

The activation and staffing was completed in a reasonable time. The principal used a written call-down list to contact all staff members. The principal reported that actual activation was achieved in approximately twenty minutes. The number of staff was adequate to support required operations, and all staff members were well trained in their emergency functions. Twenty-four hour staffing was not demonstrated nor accounted for. The principal reported that the staff present would have to provide round-the-clock staffing.

II. Registration and Monitoring of Evacuees

The evacuees were monitored for contamination at the doorway of the facility, located within the Orange High School, by rescue squad members who are trained in the proper procedures. Upon determination of contamination or non-contamination of an individual, they would be led to appropriate points in the EAC. The non-contaminated evacuees would be taken to the registration desk, and the contaminated evacuees would be taken to a paper runner which led to the decontamination station. The outer clothing is deposited in a covered container en route. Upon arrival at the showers, there is another covered container, which is well marked, for deposition of final clothing. After showering, temporary clothing would be available for the evacuees. The decontaminated evacuees would then be taken to the registration desk.

III. Congregate Care of Evacuees

The EAC is located well outside of the ten mile EPZ. There are only approximately 110 possible evacuees living within the ten mile EPZ and the center can readily accommodate this number of persons. Adequate sleeping, toilet, drinking, storage and parking facilities are available. The school cafeteria had adequate supplies of emergency foodstuffs. There were no special considerations for the handicapped however, the emergency response facility is located on the first floor, with the exception of the cafeteria.

IV. Scenario

The scenario was adequate to demonstrate EAC activities.

Decontamination Activities

The decontamination facility was also located at the Orange High School. The Fire Department had equipment to decontaminate equipment and vehicles. Upon arriving at the mass care center, all persons and vehicles would be monitored by a rescue squad for possible contamination. Center staff were aware of proper decontamination procedures, however, actual demonstration of decontamination activities was not observed.

Spotsylvania County EOC

I. Activation and Staffing

The Sheriff's Office received notification of an Unusual Event at the North Anna Power Station at 1340 over the dedicated phone in its central dispatch office from the Utility. Using the Standard Operating Procedures and call-down lists provided, the dispatcher notified the Emergency Management Coordinator (EMC), who reported to the EOC. Upon notification of the Alert status at 1348, the EMC began alerting the staff and informed them of the status of the

incident and placed them on telephone standby until further notice. At 1645 the EOC received notification from the Utility that the emergency was upgraded to a Site Area Emergency. At that time all staff were contacted again and told to report to the EOC. Staffing was completed at 1720. However, the Superintendent of Schools advised the EMC that he had other commitments and left the EOC. His duties were turned over to the Deputy Emergency Management Coordinator who was otherwise occupied with the coordination of all response actions in the County EOC. The Superintendent of Schools should remain in the EOC and coordinate response actions between the EOC and EAC Manager, thereby relieving key decision-makers of this additional function.

The EOC was fully staffed with the following organizations:

- Emergency Management Coordinator
- Deputy Emergency Management Coordinator
- Public Information
- Rumor Control
- Message Center
- Red Cross
- Social Services
- Superintendent of Schools
- Transportation
- Public Works
- Medical/Health
- RADEF Officer
- Disaster Analysis
- Rescue
- Fire Department
- Sheriff Department
- State Police
- County Extension Agent
- RACES
- Various Volunteers Serving As Message Runners

All staff members displayed adequate training and knowledge. Twenty-four hour staffing capability was demonstrated by presentation of a roster and double staffing. The response effort in Spotsylvania County (EOC staff and EAC staff) included support from well over 100 people, most of whom were volunteers. They should be commended for their enthusiastic participation.

II. Emergency Operations Management

The Emergency Management Coordinator, who is designated in the radiological emergency response plan, was effectively in charge of the emergency response operations. Copies of the plan and various standard operating procedures were available and utilized throughout the exercise. Message logs were kept, messages were reproduced and routed immediately to the appropriate action agency. Message handling was very efficient. However, in order to relieve some of

the confusion and space problems in the operations area, the message center should be set up in the room immediately adjacent to the operations room. It is also suggested that since the message center keeps a copy of all messages, that the log contain only essential information and not the entire message text. Access to the EOC area was controlled by the Sheriff's Department. Badges were made up for all members of the response team and were worn throughout the exercise. The EOC was notified of Alert status at 1348, Site Area Emergency at 1645, and General Emergency at 1732. All emergency response personnel were placed on standby at 1600 and activated after Site Area Emergency. Elected officials were present and actively involved in decision-making.

III. Facilities

The facilities used for the EOC were adequate for an emergency response staff. There were sufficient furniture, lighting and telephones available. Space in the operations room was somewhat limited. In order to partially alleviate this congestion several response functions have been moved to offices outside the operations room. Back-up power is available and tested weekly. Emergency classification levels were posted on the status board, which was clearly visible and kept continuously up-to-date. All necessary maps were available and posted.

IV. Communications

The County has established an outstanding communications network, both with primary and back-up methods. The Instaphone is used as the primary means of contact between State EOC, North Anna EOF, and surrounding EOCs. This is backed up with RACES, VCIN, and commercial telephone. The Instaphone is located in the Sheriff's dispatch office. In order for the County EMC to be able to talk directly to the State EOC and EOF personnel, a drop off the Instaphone line should be located in the operations room.

The primary contact with the local EAC was provided by the Civil Air Patrol (CAP), with emergency vehicles by the County radio net, and with the radiological monitoring teams by RACES. All these radio nets were backed up by commercial telephone. The RACES operators were also providing a transmission path for Red Cross traffic between the County and State EOC.

All message traffic was recorded on the proper forms and then passed through the message control point where it was logged and then distributed to the action individual.

Overall, the communications and message traffic was handled very professionally.

V. Dose Assessment and Protective Action Recommendations

Four local monitoring teams were mobilized and dispatched from the EOC at 1830. Three were assigned to field routes and the fourth sent to the EAC. All teams were formed from members of volunteer fire departments, who are accessible through twenty-four hour paging systems and RACES back-up. When the members arrived at the EOC shortly before Site Emergency, they were briefed and updated on plant conditions, equipment check procedures, exposure control and team responsibilities, i.e., route assignments, monitoring and reporting procedures. Each team was supplied with anti-contamination clothing, high and low-range pocket dosimetry, TLDs, adequate detection equipment (1-700 and 2-715s) and route maps.

Each team was assigned a RACES volunteer to accompany them. The RACES member provided a back-up communication system to the emergency vehicles' mobile FM systems. Teams were instructed to call in readings using both systems.

One monitoring team was observed in the field. The team was familiar with the area they were assigned to monitor. The team demonstrated their ability to properly monitor their assigned locations and call in their readings. Team members wore proper dosimetry and monitored and recorded their readings at appropriate intervals. On occasion "dead spots" occurred along their route where the team was unable to communicate monitored readings. However, minor movement of the vehicle reestablished communications. KI was not available to team members, nor were they aware of what it is or procedures for its use. Although the proper use of dosimetry was demonstrated, the members were not aware of what maximum doses were allowed or what constituted dangerous levels. They were aware of the location of the decontamination center, but had no idea of when they would need to report to the decontamination center.

VI. Public Alerting and Instruction

The County received a message from the State EOC at 1802 that the siren system and EBS had been activated at 1759. There was no attempt by the State to coordinate the activation of this system with Spotsylvania County. The County has many actions to take in conjunction with the alert and notification system activation and should be aware beforehand of exactly when the system is to be activated. Route alerting was not discussed or demonstrated during this exercise.

Although the State was responsible for activation of the EBS system and preparation of messages to be aired over the EBS station, Spotsylvania County did prepare and send out, over regular local radio stations, informational type news releases to the public. These news releases were coordinated with the State PIO. They were clear and appropriate to the situation.

VII. Protective Actions

A. Evacuation and Traffic Control

A full demonstration of access control was conducted by the County Sheriff's Office and the State Police. Three posts were manned by State and local police. Each location was provided signs by the Virginia Department of Highways. The police stopped all vehicles passing through the control points and informed the public that an exercise was in progress and an exercise brochure was given to each vehicle. Those vehicles entering the EPZ were also told that in an actual emergency they would not be allowed to proceed. All officers were fully aware of their responsibilities, how to control ingress and were familiar with the location of the mass care center. The officers had also been trained in radiological monitoring and exposure control.

The police/public interchange was a very positive aspect of this demonstration. The public appeared to very favorably receive the information provided.

Activation of traffic and access control points and Evacuation Assembly Center were ordered promptly.

B. Special Evacuation Problems

The Transportation Officer in the EOC is responsible for the evacuation of mobility impaired individuals. There are two such people in Spotsylvania County within the ten mile EPZ. Actual communication with these individuals was not observed. The equipment/vehicles are reportedly available in the County to evacuate the mobility impaired individuals.

C. Implementation of Ingestion Pathway Protective Actions

The County Extension Agent informed the observer that there are six large dairy farms in the ten mile EPZ in Spotsylvania County. These cattle are always fed with stored feed and water. However, County officials are unaware of any existing plans or procedures for farmers to reenter the evacuated area to feed and milk their livestock. No ingestion pathway protective action recommendations were received from the State Department of Agriculture. Local officials should be instructed as to established procedures for reentry of farmers into the restricted area.

VIII. Radiological Exposure Control

All field workers reported to the EOC after Site Area Emergency. They were issued high (0-200R) and low (0-200mR) range dosimeters and permanent record dosimeters (TLDs). Appropriate instructions for charging and reading dosimeters and record keeping were given by the Radiological Officer at a briefing for all field workers. Field workers knew where to report for decontamination, but were not aware of maximum doses allowed without authorization, in some instances.

A recommendation to administer KI to emergency workers in Spotsylvania was received from the State EOC at approximately 1900. Adequate supplies of KI were available; however, some field workers were not aware of procedures concerning its use.

IX. Media Relations

An office was designated for press briefings in the EOC, and briefings were given over the telephone by the PIO to local press and radio stations. All information given to the media was coordinated with the State PIO. Rumor control was established, with the PIO keeping the rumor control staff current on the emergency status.

X. Recovery and Reentry

Not demonstrated during this exercise beyond continued radiological field readings.

XI. Scenario

The scenario was adequate to test the Spotsylvania County RERP.

Spotsylvania County EOC Deficiencies/Recommendations

1. The Superintendent of Schools acts as liaison between the EOC and EAC at the County. After reporting to the EOC, however, he left because of other commitments. The liaison between the EOC and EAC is a very important position that should be manned to coordinate the response activities between the EOC and EAC, thereby relieving key decision-makers of this additional function.
2. The EOC operations room is a somewhat congested area when all staff are present. It is recommended that the message center be relocated to the room immediately adjacent to the operations room to alleviate some of the congestion.
3. Message center personnel maintain an official copy of all messages and are responsible for maintaining the status boards and official message logs. To relieve some of the demands placed on message center personnel, message logs should contain only essential information, not the entire text of the message.
4. A drop off the Instaphone should be located in the EOC operations area which would permit direct communications between the EMC and the decision-makers at the State EOC, the EOP and other risk counties.
5. County operations staff are not aware of any plans or protective action procedures for farmers in the area who may request to reenter the EPZ in order to feed and milk their livestock. The County Extension Agent should work with the State Department of Agriculture to clarify established procedures to protect these individuals.

6. Briefings to field workers should include procedures in the use of KI and maximum doses allowable without authorization.
7. The County did not demonstrate route alerting procedures. It is noted that this was an identified deficiency in the previous exercise, and should have been demonstrated during this exercise.

Spotsylvania County Evacuation Assembly Center

1. Activation and Staffing

Staffing of the EAC occurred earlier than called for in the plan. The EAC Manager was called during the Alert phase and activation procedures (unobserved) were implemented at that time. The EAC was almost fully staffed within fifteen minutes of the Site Area Emergency. Since many of the staff (volunteers) were working in the school (the Battlefield Intermediate School), or the immediate vicinity, this early activation is justifiable. Approximately fifty individuals were staffed within EAC:

- (10) EAC Manager and immediate staff (food, maint., etc.)
- (3) Sheriff's Office (security)
- (1) State Department of Health (radiological)
- (3) Local Department of Health
- (8) Social Services (registration, radiological monitoring, issuing clothing, etc.)
- (5) Red Cross (included nurse)
- (2) Volunteer ambulance corporation
- (4) Volunteer firemen (radiological monitoring in full gear)
- (15) Volunteers - no predesignated assignment

The staff size was sufficient, but additional representation from State Health and additional radiological monitors would abet operations.

The staff appeared to be adequately trained for their assigned functions. Refresher training of radiological monitors by the State Health individual was provided as needed.

Call lists for the EAC second shift were available at both the EOC and EAC. Simulated calling of the second shift was demonstrated.

Though the staff knew their individual assignments, the EAC Manager did not provide sufficient supervision and coordination to combine these individual activities into a smoothly run operation. The staff was not informed of the status of activities during the exercise.

II. Registration and Monitoring of Evacuees

All evacuees were checked for contamination upon entrance to the EAC. Upon completion of radiological monitoring activities, all individuals were processed (registered), with those identified as being contaminated being routed through the decontamination facilities at the EAC.

III. Congregate Care of Evacuees

The EAC (Battlefield Intermediate School) is located approximately sixteen miles from the North Anna Power Station. This center could accommodate approximately 1,000 individuals with food and shelter, if necessary. Should additional facilities be necessary for an overflow of evacuees, another school is located nearby which can be utilized. The food supply at the EAC was sufficient for the staff and evacuees. Communication between the local EOC and EAC was via commercial telephone.

Decontamination Activities

The decontamination facility was located at the EAC. Upon entering the EAC, all evacuees went through two contamination checkpoints. Volunteer firemen (monitors) checked evacuees outside the EAC with CDV-700 instruments, while radiological monitors (Social Services) monitored evacuees inside the building with Ludlum instruments. Though this was redundant, it gave all monitors the opportunity to get additional training. Protective clothing was available to volunteer firemen but not for the other radiological monitors. While procedures were demonstrated for determining the need to decontaminate people, equipment and vehicles, actual demonstration of decontamination of equipment or vehicles was not observed. Upon completion of the contamination check, those evacuees who were determined to be contaminated were processed through the decontamination facilities. Pathways were clearly identified to distinguish contaminated versus clean areas. However, additional supervision is necessary to monitor and limit access of contaminated individuals to specified areas. At the shower facilities, contaminated evacuees simulated disrobing and placing all contaminated clothing into metal bins. They were issued towels and soap (other items from Red Cross) for showering. After showering, they were immediately rechecked for contamination by radiological monitors. If still contaminated, they would go through showering again. If contamination was still present, the State representative from the Department of Health was present to determine a further course of action. Clothing provided by Salvation Army was available for evacuees following the decontamination process.

The major deficiency in the decontamination process was logistical; EAC personnel should consider additional measures to restrict the contact of clean and contaminated persons in the Center.

For the most part, the EAC demonstrated the capability to adequately operate during an emergency situation.

Evacuation Assembly Center Deficiencies/Recommendations

1. The physical layout at the entrance to the EAC should be revised in order to eliminate the possibility of contaminating "clean" evacuees and emergency workers. The following areas should be considered:

(a) contaminated evacuee area and the registration area should be set further apart and contaminated individuals should be registered after decontamination; (b) following decontamination, women should not have to pass through a contaminated area to enter the EAC.

2. At one point during the exercise, individuals were observed entering the EAC through the kitchen area. This could pose a potential problem during an emergency, should these individuals be contaminated. Actions should be taken to provide better access control to the EAC.
3. Although the staff in the EAC knew their individual assignments, the EAC Manager was lax in providing sufficient supervision and coordination to combine these individual functions into a smoothly run operation. The staff was not informed of the status of activities during the exercise.

SUMMARY LIST OF DEFICIENCIES/RECOMMENDATIONS

This report has referenced two types of deficiencies. Category "A" and Category "B". It is important to differentiate between the two.

A Category "A" deficiency is of the type that would cause a finding that off-site emergency preparedness was not adequate to provide reasonable assurance that appropriate protective measures can be taken to protect the health and safety of the public living in the vicinity of the North Anna Power Station in the event of a radiological emergency.

Category "B" deficiencies include those where demonstrated (and observed) performance during the exercise was considered faulty, corrective actions are considered necessary, but other factors indicate that reasonable assurance could be given that, in the event of an actual radiological emergency, appropriate measures can be taken to protect the health and safety of the public.

Also included under Category "B" deficiencies are Category "B" recommendations. Category "B" recommendations are those areas where performance was considered adequate, but where a correctable weakness was noted. Correction of the weakness would enhance the ability of the organization to perform their adequately demonstrated response capability.

SUMMARY OF CATEGORY "A" DEFICIENCY

Deficiency/Recommendation	Reference NUREG-0654 Part II	Correction	Proj'd Date	Actual Date
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Louisa County

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| 1. After receiving the Governor's evacuation directive, which EOC staff perceived to be inappropriate, County officials failed to contact the State EOC for clarification, resulting in a thirty-five minute delay in implementing the protective action. In order to assure a coordinated response, thus minimizing public confusion, County officials should contact the State EOC promptly regarding questions on directions or instructions, and protective actions should be completed on a timely basis. | J.9 | | | |
|--|-----|--|--|--|

SUMMARY OF CATEGORY "B" DEFICIENCIES

Deficiency/Recommendation	Reference NUREG-0654 Part II	Correction	Proj'd Date	Actual Date
<u>Commonwealth of Virginia</u>				
1. The State Operations Officer should ensure that all documents concerning protective actions, to include the Governor's Proclamation of Emergency, conform with current protective action recommendations/decisions.	E.5			
2. The need for heightened coordination and sharing of information received by the BRH at the State EOC should be emphasized with BRH staff. Updates to radiological/meteorological conditions should be immediately forwarded to the appropriate individuals/organization.	E.5 J.9			
3. Communication to the Counties regarding the timing of the simulated EBS and siren activation was belated, and no advance coordination with the primary siren activation point was demonstrated. Future exercises should actually demonstrate activation of the siren and EBS systems.	E.5 F.1.b.			

SUMMARY OF CATEGORY "B" DEFICIENCIES

Deficiency/Recommendation	Reference NUREG-0654 Part II	Correction	Proj'd Date	Actual Date
4. The Department of State Police should ensure that all police department emergency workers are issued TLDs and instructed to maintain record keeping cards. (See Louisa County report.)	K.3.a. K.3.b.			
<u>State/Local Radiological Monitoring Teams</u>				
5. Field teams should be briefed with regard to meteorological conditions by the EOF prior to their deployment to the field; local team members should be instructed as to their roles/responsibilities.	J.9			
6. Additional training should be provided to team members with regard to decontamination procedures, maximum dose allowed without authorization, and instructions regarding procedures to be followed if dose limits are exceeded.	K.3.a. O.4.c.			
7. Communications should be maintained between the field teams and the EOF throughout the course of the exercise as to team locations, plant conditions, etc.	F.1.d.			

SUMMARY OF CATEGORY "B" DEFICIENCIES

Deficiency/Recommendation	Reference NUREG-0654 Part II	Correction	Proj'd Date	Actual Date
<u>Agricultural Sampling Team</u>				
8. Field sampling teams should be provided with two-way radios in their vehicles to permit the timely exchange of information.	F.1.d.			
9. Recording keeping cards should be issued to sampling teams members along with other dosimetry equipment.	K.3.a. K.3.b.			
<u>News Media Center</u>				
10. The Department of Emergency Services and Public Information staff should review information flow processes to the News Media Center to ensure the timely transmission of information regarding plant status.	E.5 G.4.b.			
<u>Caroline County</u>				
11. One access point to the EOC designed for use by the media was left unmonitored for an extended length of time. Arrangements should be made to prevent this in future exercises.	J.1 ⁿ .j.			

SUMMARY OF CATEGORY "B" DEFICIENCIES

Deficiency/Recommendation	Reference NUREG-0654 Part II	Correction	Proj'd Date	Actual Date
12. The State EOC did not initiate any discussion with the County regarding ingestion pathway protection actions. In the absence of such State initiative, the County should have sought information concerning the ingestion pathway.	J.9 J.11			
13. Protective clothing was not available to County emergency workers in the field. Some of this type equipment, which is available at the County EOC, should be prepositioned at a more convenient location.	K.3.a.			
<u>Hanover County</u>				
14. Security should be more fully demonstrated during future exercises.	J.10.j.			
15. Elected officials should take a more active role in future exercises.	A.2.a.			
16. If the County continues to use the operations room used in this and past exercises, a drop off for the Instaphone and additional telephone lines should be installed at the EOC. It is noted that this was an identified deficiency in the previous exercise.	F.1.d. N.5			

SUMMARY OF CATEGORY "B" DEFICIENCIES

Deficiency/Recommendation	Reference NUREG-0654 Part II	Correction	Proj'd Date	Actual Date
17. The EOC staff need to better develop their plans for route alerting. The EMC is unaware of how many vehicles would be needed or the path that they would take. Also, a general, prescribed message should be developed that these teams will broadcast. It is recommended that they alert residents to tune to their EBS station.	E.5 E.6 J.10.c.			
18. The RADEF Officer should refamiliarize himself with the procedures established for emergency worker radiological exposure control.	J.9 O.1			
19. Emergency workers should be fully briefed on the maximum dose allowable without authorization.	J.9 K.4 O.4.g.			
<u>Louisa County</u>				
20. Some emergency workers observed in the field were unfamiliar with the radiation exposure limit. Emergency workers should be fully briefed on the maximum dose allowable without authorization.	J.9 K.4 O.4.g.			

SUMMARY OF CATEGORY "B" DEFICIENCIES

Deficiency/Recommendation	Reference NUREG-0654 Part II	Correction	Proj'd Date	Actual Date
21. Route alerting teams simulated broadcasting a message which, according to County officials, would have advised residents to evacuate. In the interest of time and clarity, a general, pre-scripted message is recommended, instructing residents to tune to their EBS station.	E.5 E.6			
<u>Spotsylvania County</u>				
22. The Superintendent of Schools acts as liaison between the EOC and EAC at the County. After reporting to the EOC, however, he left because of other commitments. This is a very important position that should be manned to coordinate response activities between the EOC and EAC, thereby relieving key decision-makers of this additional function.	A.1.e.			
23. It is recommended that a drop off of the Instaphone be located in the EOC Operations area which would permit direct communications between the EMC and the decision-makers at the State EOC, EOF and other risk counties.	F.1.d.			

SUMMARY OF CATEGORY "B" DEFICIENCIES

Deficiency/Recommendation	Reference NUREG-0654 Part II	Correction	Proj'd Date	Actual Date
24. County operations staff are not aware of any protective action procedures for farmers in the area who may request to reenter the EPZ in order to feed and milk their livestock. The County Extension Agent should work with the State Department of Agriculture to clarify established procedures to protect these individuals.	J.10.e. J.11 K.4 O.1			
25. Briefings to field workers should include procedures in the use of KI and maximum doses allowable without authorization.	J.9 J.10.e. K.4 O.4.g.			
26. The County did not demonstrate route alerting procedures. It is noted that this was an identified deficiency in the previous exercise and should have been demonstrated during this exercise.	E.5 N.5			

SUMMARY OF CATEGORY "B" DEFICIENCIES

Deficiency/Recommendation	Reference NUREG-0654 Part II	Correction	Proj'd Date	Actual Date
<p>27. The physical layout at the entrance to the EAC should be revised in order to eliminate the possibility of contaminating "clean" evacuees and emergency workers. The following areas should be considered:</p> <ul style="list-style-type: none"> -contaminated evacuee area and the registration area should be set further apart; -contaminated individuals should be registered after decontamination; -following decontamination, women should not have to pass through a contaminated area to enter the EAC. 	K.5.b			
<p>28. At one point in the exercise, individuals were observed entering the EAC through the kitchen area. This could pose a potential problem during an emergency, should these individuals be contaminated. Actions should be taken to provide better access control to the EAC.</p>	J.10.j. K.5.b.			

SUMMARY OF CATEGORY "B" RECOMMENDATIONS

Deficiency/Recommendation	Reference NUREG-0654 Part II	Correction	Proj'd Date	Actual Date
<u>Commonwealth of Virginia</u>				
29. Additional training should be provided to back-up support staff responsible for message handling and status board updates.	0.1			
30. BRH information handling procedures should be reviewed for possible improvement, to include the need for clarification of messages received if not completely clear.				
31. The EOC PIO should utilize available hard copy transmission devices (telefax, VCIN or the new computer network) to provide the Counties with timely information updates.	G.4.b.			
<u>State/Local Radiological Monitoring Teams</u>				
32. It is recommended that the joint teams expeditiously prepare for field deployment at the staging area to allow for immediate deployment upon direction from the EOF.	I.8			

SUMMARY OF CATEGORY "B" RECOMMENDATIONS

Deficiency/Recommendation	Reference NUREG-0654 Part II	Correction	Proj'd Date	Actual Date
33. Consideration should be made for more extensive use of the field teams' capabilities, i.e., the monitoring of additional locations and a greater variety of samples, including water, soil and/or vegetation.	I.8			
<u>News Media Center</u>				
34. It is recommended that a working area be set aside for PIO staff use, secluded from the media briefing area.				
<u>Caroline County</u>				
35. All significant incoming and outgoing EOC messages should be logged. Significant on and off-site events, including emergency classification levels, should be posted and updated in order to enable newly arrived staff to quickly orient themselves as to the status of the emergency response.				

SUMMARY OF CATEGORY "B" RECOMMENDATIONS

Recommendation	Reference NUREG-0654 Part II	Correction	Proj'd Date	Actual Date
<u>Hanover County</u>				
36. The antennae cable for the RACES equipment had been severed, requiring the RACES staff to operate from their vehicle outside of the building, somewhat delaying the receipt of messages. The antennae cable should be repaired.	F.1			
37. A larger room providing seating for anticipated press representatives would better accommodate media functions. Additional maps, such as the EPZ and Evacuation Route maps, would be extremely helpful in accomplishing more effective briefings.	J.10			

SUMMARY OF CATEGORY "B" RECOMMENDATIONS

Deficiency/Recommendation	Reference NUREG-0654 Part II	Correction	Proj'd Date	Actual Date
<u>Louisa County</u>				
38. County officials strongly favor using the siren system and EBS to provide early warning to the public, preferably at the Site Area Emergency phase. This does not conform to the State's policy of using the sirens and EBS to alert and notify the public at the time protective actions are announced. It is recommended that County and State officials resolve this issue by developing a coordinated approach towards the use of the siren and EBS public notification systems.	E.5			
39. The capability for the exchange of hard copy news releases among the County EOC, State EOC and the Joint Media Center was not available at the County. In order to permit effective coordination of news releases between the County and State PIOs, some means for transmitting and receiving hard copy news releases should be established and used at the County EOC.	G.4.b.			

SUMMARY OF CATEGORY "B" RECOMMENDATIONS

Deficiency/Recommendation	Recommendation NUREG-0654 Part II	Correction	Proj'd Date	Actual Date
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40. It is recommended that a large, clearly visible status board be utilized at the County EOC.				
<u>Orange County</u>				
41. It is recommended that a dedicated line or other direct communication link between the Dispatcher's Office and the EOC be established.	F.I.d.			
<u>Spotsylvania County</u>				
42. The EOC operations room is a somewhat congested area when all staff are present. It is recommended that the message center be relocated to the room immediately adjacent to the operations room to alleviate some of this congestion.				

SUMMARY OF CATEGORY "B" RECOMMENDATIONS

Deficiency/Recommendation	Reference NUREG-0654 Part II	Correction	Proj'd Date	Actual Date
43. Message center personnel maintain an official copy of all messages and are responsible for maintaining the status boards and official message logs. To relieve some of the demands placed on message center personnel, message logs should contain only essential information, not the entire text of the message.				
44. Although the staff in the EAC knew their individual assignments, the EAC Manager did not provide sufficient supervision and coordination to combine these individual functions into a smoothly run operation. The staff were informed of the status of activities during the exercise.	0.4.			