UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of	)	
	)	
CLEVELAND ELECTRIC ILLUMINATING COMPANY, ET AL,	)	Docket No. 50-440 OL 50-441 OL
	)	
(Perry Nuclear Power Plant, Units 1 and 2)	)	

AFFIDAVIT OF DONALD J. PERROTTI REGARDING EMERGENCY PLAN ISSUES

I Donald J. Perrotti, being duly sworn, state as follows:

1. I am employed by the Nuclear Regulatory Commission, in the Office of Inspection and Enforcement, Division of Emergency Preparedness and Engineering Response. I am responsible for the review and assessment of the onsite emergency plan concerning the Perry Nuclear Power Plant. My professional qualifications are attached.

2. The purpose of this affidavit is to address those emergency plan contentions admitted to this proceeding which in whole or part, assert deficiencies in the onsite emergency plans. Those contentions are designated A, B, G, I, J, M, O, CC, DD, GG, and JJ. I shall respond to each contention separately, as admitted by the Atomic Safety and Licensing Board in an Order dated January 10, 1985, pp. 6-7, with reference to "Sunflower Alliance's Particularized Objections to Proposed Emergency Plans in Support of Issue No. 1" (Objections), dated August 20, 1984.

3. Contention A states:

> Evacuation time estimates have not been reviewed by State or local organizations and adverse weather conditions have not been considered.

Response

4. The Intervenor referenced deficiencies in the onsite plan described in the Perry SSER #4, p. 13-16 as the basis for Contention A. (Objections, pp. 2, 3). The specific adverse weather conditions omitted from consideration according to the Intervenor was rain, flooding, and fog during a summer Sunday thunderstorm, as well as snow. Regarding the review by State and local organizations, Appendix D to the PNPP emergency plan, Revision 3, entitled "Evacuation Time Estimates For Areas Near The Perry Nuclear Power Plant", March 1984, states:

> "HMM Associates would like to acknowledge all those people and agencies who assisted in the preparation of this report. We feel that the quality and completeness of the report has been enhanced through their consistent effort. Specifically, the Geauga, Lake and Ashtabula County Disaster Services Agencies (DSA's) as well as the County Sheriff's Departments all provided ongoing assistance in our search for accurate and complete input data. Other agencies which contributed positively to our effort include the Lake County Planning Commission, the Mentor and Painesville Area and Ashtabula County Chambers of Commerce, and the Ohio State Highway Patrol", (PNPP emergency plan, Appendix D, p.vi).

5. In response to SSER 4, Item 13.3.2.10(3), the Applicant, in correspondence dated April 28, 1984, specified that the evacuation time estimate (ETE) study was currently being reviewed with State and local officials and a letter of concurrence is expected from each. The staff finds the Applicant's response satisfactory. SSER Item 13.3.2.10(3) is confirmatory, pending the Applicant's submittal of copies of acceptable letters of concurrence for the staff's review.

6. Regarding the consideration of adverse weather conditions, the PNPP emergency plan states:

> "Pursuant to NUREG-0654 guidance, evacuation time estimates have been prepared for several temporal, seasonal and weather conditions. Estimates have been prepared for winter day fair and adverse weather conditions, winter night fair weather conditions, and summer weekend fair and adverse weather conditions. Fair weather refers to conditions where roadways are clear and dry and visibility is not impaired. Adverse weather during summer periods is defined as a rainstorm condition where visibility is impaired and roadway capacities are reduced by 20 percent. Adverse weather during winter periods is defined as a snowstorm condition where roadway capacities are reduced by 30 percent". (PNPP emergency plan, Revision 3, Appendix D, pp 2-6, 2-8).

7. In addition, the PNPP evacuation time estimate study was reviewed by the staff against the guidance of NUREG-0654/FEMA-REP-1, Revision 1, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants", November 1980, and was found to be adequate in all respects relative to the guidance of NUREG-0654, Appendix 4, "Evacuation Time Estimates Within the Plume Exposure Pathway Emergency Planning Zone", including the consideration of adverse weather conditions. Therefore, the effects of adverse weather conditions have been considered in the onsite emergency plan.

8. Contention B states:

> (1) Evacuation route impediments have not been identified or considered, (2) neither has evacuation of construction workers onsite, nor (3) has a low or no power operation at Perry during extreme conditions of inclement weather been included in the plans.

Response

9. (1) The specific route impediment mentioned by the Intervenor was snow. (Objections, p. 3). As stated above, the PNPP emergency plan addresses

route impediments such as snow at p. 2-8 of Appendix D, where the plan states, "Adverse weather during winter periods is defined as a snowstorm condition where roadway capacities are reduced by 30 percent". Also, at p 6-11, the plan states, "Recommended protective action may be extended depending on meteorological conditions, population distribution, and condition of roads and major traffic ways". Further, in the event of an accident during a severe snowstorm, evacuation may not be the appropriate protective action.

10. (2) The evacuation of workers at the plant site is addressed in the PNPP emergency plan, Revision 3 at p 6-8, where the plan states:

> "Accountability will be taken of all personnel onsite at the Site Area or General Emergency level event. To accomplish personnel accountability within 30 minutes all personnel without emergency response function will be directed to exit the site areas via normal exit routes and exit procedures ", and at Appendix D, p 3-5, where it states, "The transient population segment includes persons in the work force, motels/hotels, and recreational areas. Work force estimates for the PNPP were developed using November 1983 employee data. A listing of all industrial and plant employers identified within the EPZ, a map identifying the location of these employers, and associated employee estimates are presented in Appendix 3."

11. (3) There is no requirement to operate plants at low or no power during adverse weather conditions as an accident prevention measure.

12. I conclude that the PNPP emergency plan adequately considers the evacuation of construction workers and identifies possible route impediments including adverse weather conditions which could occur during evacuation. Further, no requirement exists to limit plant operation during severe weather. The evacuation plans for the 10-mile Emergency Planning Zone

(EPZ) and procedures to accommodate any impediments during an evacuation have been reviewed and evaluated by the Federal Emergency Management Agency (FEMA). See FEMA's response to this contention.

13. Contention G states:

> Emergency plans should include the availability of potassium iodide (KI) for emergency workers and the public.

Response

14. The Intervenor referenced 10 CFR 50.47(b)(10) and NUREG-0654 as the basis for Contention G. (Objections, p 11). While NRC's emergency planning regulations require that a range of protective actions be developed for the plume exposure EPZ (10 CFR 50.47(b)(10)), they do not specifically require that protective actions include the use of radioprotective drugs, since other means of exposure control can be used.

15. 10 CFR § 50.47 establishes the standards which must be met by onsite and offsite emergency plans to support a finding of reasonable assurance that adequate protective measures can and will be taken in event of a radiological emergency. NUREG-0654 is a Regulatory Guide and compliance is not required.

16. The PNPP emergency plan provides for KI for workers at p. 6-14, where it states:

> "Radio-protective drugs will be recommended for onsite individuals with a projected dose of 25 Rem or greater to the thyroid gland from radioiodines. Potassium Iodide (KI) in doses of 130 mg per day is the recommended quantity. The recommendation for use of KI shall be made by the Operations Manager, or in his absence, the Emergency Coordinator. A sufficient quantity of KI to allow administration to onsite emergency workers for a period of ten days will be available."

17. I conclude that the PNPP emergency plan's provision for the use of radioprotective drugs meets the requirements of 10 CFR 50.47(b)(10) and the

guidance criteria of NUREG-0654. Offsite plans have been reviewed and evaluated by FEMA against the guidance of NUREG-0654. See FEMA's response to this contention.

18. Contention I states:

> Applicant's emergency plan contemplates that an evacuation would not take place beyond a 5-mile radius of the Perry plant.

Response

19. The Intervenor expressed concerns that the four curves related to core conditions in Figure 4-1 of the PNPP emergency plan comprised the basis for plant status protective action guides, and that the Applicant would never declare a General Emergency which would necessitate protective actions beyond a 5-mile radius of PNPP. (Objections, p 13).

20. The PNPP emergency plan provides other methods for developing protective action recommendations at pp 4-1, 4-3, 4-4, 4-28 to 4-34, 6-9, and 6-10, where it states:

> "Radiation Monitoring Teams (RMTs) are required to make continuous assessments to provide officials with information to decide on protective actions."
>
> "A conservative philosophy for classification is used. For example, a Site Area Emergency is declared directly if a Site Area Emergency Action Level is exceeded, without other related events being previously identified and declared as an Unusual Event or an Alert."
>
> "While the EALs identified for a General Emergency indicate that time should be available to provide confirmative assessments prior to implementation of extensive protective actions, the Emergency Plan Implementing Instructions provide that upon declaration of a General Emergency, the Emergency Coordinator will recommend, as a precautionary measure, shelter for the general public within 2 miles of the plant and for 5 miles in the downwind direction."

As provided for in the PNPP emergency plan, a General Emergency would be declared if any of the following conditions existed:

"2. Transient (e.g., loss of offsite power) plus failure of requisite core shutdown systems."

"4. Small or large LOCA occurs and containment performance is unsuccessful in affecting longer term success of the ECCs."

"5. Shutdown occurs but requisite decay heat removal system (e.g., RHR) or non-safety system heat removal means are rendered unavailable."

"7. Loss of physical control of the facility."

"8. Any fire which could (potentially) cause massive common damage to the plant systems resulting in any of the previously listed General Emergency Classifications."

"9. Any major internal or external event (i.e., explosion, attack, missiles, accidents, etc.) which could (potentially) cause massive common damage to the plant systems resulting in any of the previously listed General Emergency classifications."

"Using the offsite dose projection, the evacuation time estimates, representative shielding factors, known or estimated isotopic compositions and projected exposure periods, the Offsite Radiation Advisor (ORA) will determine an estimated dose for both Whole Body and Thyroid exposures. These doses will then be compared to the Environmental Protection Agency's Protective Action Guidelines to arrive at a Protective Action Recommendation."

21. Thus, the plan utilizes RMTs offsite assessment, PAGs, plant status (e.g., transients, LOCA, loss of physical control) and external events in determining recommended protective actions.

22. However, during its review of Revision 3 to the PNPP emergency plan the staff expressed a concern that protective actions beyond 5 miles from PNPP were not fully described at p. 6-11, where the plan states:

"Recommended protective actions may be extended depending on meteorological conditions, population distribution, and condition of roads and major traffic ways."

23. At the request of the staff, the Applicant in correspondence dated January 16, 1985, agreed to clarify the PNPP emergency plan regarding a range of protective actions for the plume EPZ for emergency workers and the public (10 CFR 50.47(b)(10)). The clarification states:

"As noted above, assessment activities as described in the EPI's will continue to determine what additional protective actions should be recommended for the remainder of the Emergency Planning Zone. Possible protective action recommendations may range from no action necessary, to the evacuation of the entire 10-mile Emergency Planning Zone." (proposed change to p. 4-4) and "Additional Protective Action Recommendations will be made for the entire EPZ as indicated by assessments performed in accordance with the EPI's. Possible protective action recommendations made by PNPP may range from no action necessary, to the evacuation of the entire 10 mile Emergency Planning Zone. Recommended protective actions may be extended or modified depending on population distribution, meteorological conditions, and condition of roads and major traffic ways, following discussions with County and State officials", (proposed change to p. 6-11).

24. The Applicant's draft procedure, EPI-68, provides instructions on assessing the effects of the releases and, depending on meteorological conditions, population distribution, and conditions of roads and major traffic ways, expanding existing protective action recommendations.

25. I conclude that, provided the PNPP emergency plan is revised as committed to by the Applicant on January 16, 1985, the PNPP emergency plan meets the requirements of 10 CFR 50.47(b)(10) and 10 CFR 50.47(c)(2), and the guidance criteria of NUREG-0654. This matter is confirmatory, pending an acceptable revision to the PNPP emergency plan and will be so identified by the staff in SSER 5.

26. Contention J states:

> Emergency action level indicators are incomplete in Applicant' emergency plan.

Response

27. The staff's review of the PNPP emergency action level (EAL) scheme is presented in SSER 4, Section 13.3.2.4. Based on its review of Revision 3 to the PNPP emergency plan and the additional information and commitments provided by the Applicant in correspondence dated April 18, 1984, and August 20, 1984, the staff finds that unresolved SSER items 13.3.2.4(1), (2), and (3) related to the EALs have been satisfactorily addressed by the Applicant. These three items have, for the most part, been resolved; however, certain portions remain confirmatory pending revision to the PNPP emergency plan as committed by the Applicant.

28. In addition, there are 13 instances in Table 4-1 of the PNPP emergency plan where the notation "Later" is used. In all instances, the missing data to be provided at a later date refers to action points related to measured radiation or radioactivity concentration levels. The staff interprets the "Later" notation as a bona fide commitment by the Applicant to provide the missing information within a reasonable time. The staff anticipates that the missing information will be provided after calibration of radiation monitoring equipment has been completed and NRC approval of the PNPP technical specifications. In my opinion, the status of completion of EALs in the PNPP emergency plan, when compared to other applicants at this stage in the licensing process, is normal.

29. The staff will ensure, through its continuing review of the PNPP emergency plan during the licensing phase (as documented in the SER) and through its review of procedure EPI-A-1, "Emergency Action Levels", during the onsite

appraisal of the Applicant's emergency preparedness program (scheduled for February 25 - March 8, 1985), that the EALs are complete and that appropriate values have been inserted for the missing information prior to licensing.

30. I agree with the Intervenor that certain discrete information is missing in Table 4-1. However, I conclude that, based on the staff's review of the PNPP emergency plan, Revision 3, and the commitments presented by the Applicant, the PNPP emergency plan meets the requirements of 10 CFR 50.47 (b)(4) and the guidance criteria of NUREG-0654.

31. Contention M states:

> Independent Data Monitoring Systems should be installed within all counties in the Emergency Planning Zone (EPZ).

Response

32. The Intervenor asks why there is not comparable equipment (i.e., radiation detectors, high-volume air samplers, and meteorological monitors in Lake County) for Geauga and Ashtabula Counties, and references NUREG-0654 as the basis for this issue. (Objection, pp. 17, 18).

33. 10 CFR 50.47(b)(9) and NUREG-0654 require adequate methods, systems and equipment for assessing and monitoring actual or potential offsite consequences of a radiological emergency condition.

34. During normal operations, gaseous and liquid effluents from the vents and discharge points are continuously monitored by radiation detectors installed in the plant to measure the radioactive content of the effluent streams. As a backup to the plant effluent monitors, an environmental monitoring program has been established to monitor the levels of radiation and radioactive materials in the environment outside of the plant boundaries.

35. In SSER 4 the staff specifies that, "The applicant has made provisions for field monitoring within the plume exposure pathway EPZ. As part of the applicant's field monitoring capability, the Plan illustrates predesignated, fixed environmental monitoring sites immediately around the Perry facility and out to 5 miles (with several more monitoring locations beyond 5 miles). The monitoring capabilities at these locations include the use of TLDs and air samplers (not used at all locations)." (SSER 4, p 13-14).

36. In addition, the Applicant has established specific high range instrumentation and sampling systems to assess the radiation levels in the event of an accident. Trained field monitoring teams are also available to be dispatched both onsite and offsite in the event of a radioactive release. Predetermined values from the radiation monitors and other plant system indicators are used as emergency action levels in the PNPP emergency classification scheme to classify emergencies. Emphasis is placed in the Applicant's emergency plan and procedures on classifying emergencies and initiating protective actions, if required, based on plant system indicators before there is a release of radiation. Any increases in radiation levels in the plant monitoring systems above predetermined trip points, which are set at very low levels, would alert plant operators to a potential problem situation and may result in a declaration of an emergency. The Applicant is required to notify offsite authorities within 15 minutes following the declaration of an emergency (10 CFR Part 50, Appendix E, Section IV.D.3).

37. There is no requirement for the PNPP emergency plan to include provision for independent data monitoring systems for the counties within the plume EPZ.

38. I conclude that the PNPP emergency plan meets the requirements of 10 CFR 50.47(b)(9) and the guidance criteria of NUREG-0654. The offsite plans have been reviewed and evaluated by FEMA with regard to methods, equipment and expertise to make rapid assessments of the actual or potential magnitude and locations of any radiological hazards through liquid or gaseous release pathways. (NUREG-0654, Criterion II.I.8). See FEMA's response to this contention.

39. Contention O states:

> Emergency plans do not adequately set forth plans and procedures for reentry and recovery of property or the means for relaxing protection measures, within the 10-mile EPZ.

Response

40. 10 CFR 50.47(b)(13) and NUREG-0654 specify that, "General plans for recovery and reentry are developed." The staff's evaluation of the PNPP emergency plan is presented in Section 13.3.2.13 of SSER 4 where it states:

> "The Plan describes the general plans for recovery and reentry following a significant emergency event. The criteria for downgrading the level of an emergency is the same as for upgrading an emergency classification (i.e., when plant conditions no longer meet or exceed the EALs for a given emergency class, then the level of the emergency will be downgraded). The Plan indicates that both existing and potential conditions will be assessed for use in recovery operation decisions.
>
> Transition from an emergency situation to one of recovery will be declared by the Emergency Coordinator, and will be based in part on the recommendations of the Operations Manager. Upon commencement of recovery, the Emergency Coordinator assumes the role of Recovery Director and will notify offsite response organizations. The emergency plan describes, by title, the authorities and responsibilities for key individuals in the recovery organization. Both technical and administrative personnel are included in the recovery organization.
>
> As part of the recovery program, periodic determination of total population exposure will be made."

41. NUREG-0654 requires that the offsite plans describe general plans and procedures for reentry and recovery of property and the means for relaxing protective measures, within the 10-mile EPZ. FEMA has reviewed and evaluated the offsite plans. See FEMA's response to this contention.

42. I conclude that the PNPP emergency plan meets the requirements of 10 CFR 50.47(b)(13) and guidance criteria of NUREG-0654.

43. Contention CC states:

> The resolution items set forth by the staff in its Safety Evaluation Report, NUREG-0887, Supp. 4 (February 1984) pp. 13-1 to 13-22, are uncorrected deficiencies in the emergency plans.

Response

44. After SSER 4 was issued, the Applicant continued to upgrade emergency response planning and issued Revision 3 to the PNPP emergency plan, dated April 23, 1984, by correspondence dated April 28, 1984. In addition, submittals dated August 20, 1984, October 29, 1984, and January 16, 1985, provided additional clarification and commitments. The review and evaluation of the adequacy of the PNPP emergency plan (through Revision 3) and the Applicant's information and commitments provided by correspondence referenced above has been completed. All unresolved items noted in SSER 4 pp. 13-1 to 13-22 have been resolved by Revision 3 to the PNPP emergency plan or by letters of commitment.

45. Based on my review of the PNPP emergency plan, Revision 3, I conclude that, upon satisfactory completion of those items committed to by the Applicant as stipulated in correspondence dated April 28, 1984, August 20, 1984, and January 16, 1985, the PNPP emergency plan will provide an adequate planning basis for an acceptable state of onsite emergency preparedness and will meet the requirements of 10 CFR 50, and Appendix E thereto.

46. In a letter provided to NRC dated March 1, 1984, FEMA stated that, "Based on the Region V review of the Ohio State and Ashtabula, Geauga, and Lake Counties offsite radiological emergency preparedness plans, there is reasonable assurance that the plans are adequate and capable of being implemented in the event of an accident at the site."

47. After reviewing the findings on offsite preparedness made by FEMA, and after reviewing the revision(s) to the PNPP emergency plan, the staff will provide its overall conclusions on the status of emergency preparedness for Perry Nuclear Power Plant and related emergency planning zones in a supplement to the SER.

48. Contention DD states:

> The Applicant's emergency operation facility is located contrary to the criteria and guidance provided by the NRC.

Response

49. Specification of the requirements for the location and capability of the emergency operation facility (EOF) is contained in Supplement 1 to NUREG-0737, "Clarification of TMI Action Plan Requirements," January 1983. The staff's review and evaluation of the EOF, including its location, is presented in Section 13.3.2.8 of SSER 4. (SSER 4, p. 13-12). The staff found that the EOF location meets regulatory criteria and guidance.

50. Contention GG states:

> The emergency plans have not made provision for communicating with individuals (like Amish people) who do not utilize radio or television devices.

Response

51. 10 CFR 50.47(b)(5) and NUREG-0654 specify, in part, that, ". . . means to provide early notification and clear instruction to the populace within

the plume exposure pathway Emergency Planning Zone have been established." 10 CFR 50.47(b)(7) and NUREG-0654 specify that, "Information is made available to the public on a periodic basis on how they will be notified and what their initial actions should be in an emergency (e.g., listening to a local broadcast station and remaining indoors), the principal points of contact with the news media for dissemination of information during an emergency (including the physical location or locations) are established in advance, and procedures for coordinated dissemination of information to the public are established."

52. The PNPP emergency plan addresses the prompt alerting and notification of the public within the 10-mile EPZ at pp 7-9, 7-10, where it states:

> "Early warning and instructions to the population-at-risk are accomplished under the direction of the local county officials with the assistance of the state. To facilitate the alerting of the public, a Prompt Alerting System which meets the design objectives of NUREG-0654, Revision 1, Appendix 3, will be installed and tested prior to fuel load at PNPP. The Prompt Alerting System will consist of sirens placed at selected locations in Ashtabula, Geauga and Lake Counties within the 10-mile EPZ."
>
> "In general, sirens will be located along public roadways, on the opposite side of the street from utility lines where possible. Most sirens will be mounted on wooden utility poles at least 60 feet above the ground with all sirens mounted at sufficient heights to avoid exposing the public to excessive noise levels. All sirens will have a public address capability to broadcast voice messages." (emphasis added).

53. The PNPP emergency plan addresses the public emergency information program at pp 8-4, 8-5, where it states:

> "Education of the general public within the plume exposure pathway EPZ surrounding PNPP will be a coordinated effort among CEI, the State Disaster Services Agency, and the local county disaster services agencies. This program has

been established to provide information relating to an emergency at PNPP to all residents in the plume exposure pathway EPZ at the time of an emergency. This includes residents as well as transients."

"Educational material will be distributed on an annual basis, and will include material on:

1. Long term preparations for an emergency at PNPP; background information on radiation; purpose and meaning of sirens, the Emergency Broadcast System stations.

2. Possible protective actions which may be called for at the time of an emergency at PNPP, including sheltering and evacuation.

3. Measures which apply specifically to the handicapped and persons without access to transportation.

4. Points of contact for answering questions and providing further information."

54. Furthermore, according to the PNPP emergency plan, the public education and information program includes: 1) an emergency information booklet containing basic background information on nuclear power plants, radiation, and emergency planning which will be distributed to households within the plume EPZ prior to issuance of an operating license, 2) emergency information posters distributed to locations where high concentrations of transients are expected, 3) emergency information in telephone books within the 10-mile EPZ, and 4) public tours of PNPP to which residents of the 10-mile EPZ have been invited. (PNPP emergency plan, p 8-5).

55. I conclude that, provided the Applicant satisfactorily completes the confirmatory items related to the prompt alert/notification system and the public education and information program as identified by the staff in SSER 4, Sections 13.3.2.5(1) and (2), and 13.3.2.7(1), the PNPP emergency

plan meets the requirements of 10 CFR 50.47(b)(5) and (7) and the guidance of NUREG-0654. Offsite plans have been reviewed and evaluated by FEMA with regard to notifying and providing prompt instructions to the public. See FEMA's response to this contention.

56. Contention JJ states:

> Emergency plans do not provide for back-up power so that evacuation procedures and activities can be carried out.

Response

57. The Intervenor expressed a concern that in the event of loss of power from PNPP there would be insufficient energy supplies to operate sirens and independent monitoring systems. (Objections, p. 27). Since PNPP is tied into the electrical grid, electrical power would be supplied to the local area from the grid in the event PNPP tripped off the line. In addition, the PNPP emergency plan specifies that, "The sirens in this system are capable of continuous operation for up to 30 minutes from batteries, even in the event of a total system distribution power failure." (PNPP emergency plan, p 7-10). Also, the plan specifies that, "To assist in post-accident evaluation, high range gamma monitors will be added to the reactor building and to the drywell to provide a range of 1 R/hr to 10^7 R/hr. They will be powered from independent 120V AC, diesel-backed buses and will be provided with continuous readout and multipoint recorders in the Control Room." (PNPP emergency plan, p. 7-12). In addition to in-plant monitoring systems, the Applicant has provided for onsite and offsite monitoring teams utilizing portable, battery-powered radiation monitoring equipment as discussed above.

58. There is no requirement for the PNPP emergency plan to include provision for compensating for loss of power from PNPP regarding the operation of emergency-set traffic lights, gasoline pumps and the like. Offsite plans have been reviewed and evaluated by FEMA regarding this matter. See FEMA's response to this contention.

59. In conclusion, based on my review and assessment of the PNPP emergency plan and supporting documents, and the exercise of that plan on November 28, 1984, and for the reasons stated above, it is my opinion that the contentions raised by the Intervenor concerning the onsite emergency plan for PNPP have been adequately addressed and accommodated by the Applicant. It is also my opinion that, provided the confirmatory items identified by the staff in SSER 5 are satisfactorily completed by the Applicant, the onsite emergency plan is adequate to provide appropriate actions and recommended protective measures in the event of a radiological emergency at Perry Nuclear Power Plant.

I attest that the foregoing is true and correct to the best of my knowledge and belief.

Donald J. Perrotti

Donald J. Perrotti

Subscribed and sworn to before me
this 19th of February, 1985.

Elizabeth Reese

Notary Public

My Commission expires: July 1, 1986

DONALD J. PERROTTI
OFFICE OF INSPECTION AND ENFORCEMENT
STATEMENT OF PROFESSIONAL QUALIFICATIONS

I am employed as an Emergency Preparedness Specialist in the Emergency Preparedness Branch, Division of Emergency Preparedness and Engineering Response, Office of Inspection and Enforcement, U.S. Nuclear Regulatory Commission. I have responsibility for the review and evaluation of radiological emergency plans submitted by reactor applicants and licensees to assure that proposed plans meet the regulatory requirements and guidance of the Commission. I also function as a Team Leader and Team Member on Emergency Preparedness Appraisal Teams engaged in the onsite inspection of the implementation phase of licensee emergency programs. I observe nuclear power plant emergency drills and exercises involving State and local government response agencies and participate in inter-agency critiques. I served as the staff's expert witness for onsite emergency planning during the evidentiary hearing for the Waterford 3 operating license.

From December 1976 to October 1980 I was employed at the NRC's Region II Office of Inspection and Enforcement in Atlanta, Georgia. I was the lead inspector for Region II emergency planning inspections at nuclear power reactors and fuel facilities. My responsibilities included planning, conducting and documenting inspections of licensees' emergency plans and procedures, emergency facilities and equipment, emergency training, tests and drills, and coordination with offsite support agencies. From April 1977 to August 1978, I assisted my immediate supervisor who served as Chairman of the Federal Regional Advisory Committee (RAC) in the review of State Radiological Emergency Plans. During October 1978 I assisted in the review and approval of emergency plans for two

nuclear fuel facilities. During the period of March - August, 1979, I participated in the Commission's coverage of environmental monitoring programs at Three Mile Island, where I served as Emergency Monitoring Team Leader; in that capacity, I was responsible for coordination with State and Federal agencies engaged in measurement and evaluation of environmental radioactivity levels in the vicinity of the TMI nuclear plant.

From 1973, to 1976, I was employed at Florida Power and Light Company's Turkey Point Nuclear Power Plant, as Health Physics instructor. My duties included radiation safety training of plant personnel (general employees and technicians), special project reports such as providing background material for management comment on proposed changes to the Code of Federal Regulations, and maintaining radiation exposure records for plant personnel.

From 1953 to 1973, I served in the United States Army. As a member of the U.S. Army Engineer Reactors Group during the period 1961 - 1973, I performed a variety of jobs with varying degrees of responsibility as rank and experience were gained. Among my more responsible jobs were shift health physics technician at the PM-3A Naval nuclear power plant in McMurdo, Antarctia (1965-1966), Senior Health Physics/Process Chemistry instructor at Ft. Belvoir, Virginia (1966-1972), and Project Officer for the SM-1 Army nuclear power plant (1972-1973).

I received an Associate of Arts Degree from the New York State Regents Albany, NY, in 1973. In addition, I attended Army service schools including Special Nuclear Weapons Disposal and the 52-week Nuclear Power Plant Operators course. I have completed the following U.S. Public Health Service courses:

Basic Radiological Health
Radionuclide Analysis by Gamma Spectroscopy
Environmental Radiation Surveillance
Analysis of Radionuclides in Water
Occupational Radiation Protection
Chemical Analysis for Water Quality
Statistical Methods - Quality Control in the Laboratory
Operational Aspects of Radiation Surveillance
Reactor Hazards Evaluation

I attended the "Radiological Emergency Response Operations" course at the Nevada Test Site and the "Planning for Nuclear Emergencies" course at Harvard University.

I have successfully completed the NRC's Pressurized Water Reactor Technology and the Boiling Water Reactor Technology courses.

I am and have been a member of the Health Physics Society since 1974.

Federal Emergency Management Agency

Washington, D.C. 20472

NOV 15 1984

MEMORANDUM FOR: Members, Task Force on KI
Federal Radiological Preparedness Coordinating
Committee (FRPCC)

FROM: Richard W. Krimm, Chairman
FRPCC

SUBJECT: Policy on Potassium Iodide

Attached is the latest draft verison of the potassium iodide (KI) policy on distribution of KI around nuclear power sites for use as a thyroid blocking agent. The latest draft is a result of the special task force chaired by Mr. Robert Wilkerson of my office. The Federal Emergency Management Agency (FEMA) feels that the current draft guidance is both adequate in terms of exercising Federal authority and accurate from a scientific perspective. It is, of course, the product of numerous comments by various agencies. I would like to take this opportunity to express my appreciation for your continued cooperation in the development of this guidance material.

In order to provide what FEMA considers essential guidance to State and local governments and to respond to several inquiries by members of Congress and the General Accounting Office, we are asking at this time that your agency provide us formal concurrence in the attached material. It is our hope that this concurrence can be achieved prior to February 1, 1985, to allow subsequent distribution of the guidance materials to State and local governments involved in the radiological emergency preparedness program for commercial nuclear facilities. Should you have any further difficulties with the content of the attached materials, or if you expect difficulties in obtaining your agency's concurrence within the time span requested, please contact Mr. Robert Wilkerson at 287-0200.

Attachment
As Stated

ENCLOSURE 2

Policy on Distribution of Potassium Iodide Around Nuclear Power Sites for Use as a Thyroidal Blocking Agency

The purpose of this document is to provide Federal policy and guidance with regard to distribution of potassium iodide (KI) and its usage as a thyroid blocking agent around operating nuclear power sites. The issue has been addressed in terms of two components of the population that might require or desire potassium iodide use: (1) Emergency workers and institutionalized individuals, and (2) general population. This guidance is advisory to State and local governments who, within the limits of their authority, should consider these recommendations in the development of emergency plans and in determining appropriate actions to protect the general public. In summary, the policy recommends the stockpiling or distribution of KI during emergencies for emergency workers and institutionalized persons, but does not recommend requiring predistribution or stockpiling for the general public. The bases for these recommendations are given below. It is recognized, however, that options on the distribution and use of KI rests with the States, and hence, the policy statement permits State and local governments, within the limits of their authority, to take measures beyond those recommended or required nationally.

The U.S. Nuclear Regulatory Commission (NRC) and the Federal Emergency Management Agency (FEMA) have already issued guidance to State and local authorities as well as licensees of operating commercial nuclear power plants in NUREG-0654/FEMA-REP-1, Rev. 1, recommending the stockpiling and distribution during emergencies of KI for thyroidal blocking to emergency workers and to institutionalized individuals. That recommendation is endorsed as an available protective action in the event of an incident at a nuclear power plant. Thyroid blocking for emergency workers and institutionalized invididuals was recommended because:

(1) These individuals would be more likely to be exposed to the radioiodine in an airborne radioactive release from the plant in the event of an accident;

(2) The number of individuals involved at any site is relatively small and requires a limited supply of KI that can be readily distributed;

(3) The storage, distribution, and administration of KI can be readily controlled;

(4) The medical histories of this limited number of individuals can be reviewed; and,

(5) These individuals can be readily monitored for adverse side effects by medical personnel.

The Federal position with regard to the predistribution or stockpiling of potassium iodide for use by the general public is that it should not be required. While valid arguments may be made for the use of KI, the preponderance of information indicates that a nationwide requirement for the predistribution or stockpiling for use by the general public would not be worthwhile. This is based on the ability to quickly evacuate the general population and the cost effectiveness of a nationwide program which has been analyzed by the NRC and DOE National Laboratories (NUREG/CR-1433, March 1980). While the use of KI can clearly provide additional protection in certain circumstances, the assessment of the effectiveness of KI and other protective actions and their implementation problems indicates that the decision to use KI (and/or other protective actions) should be made by the States and, if appropriate, local authorities on a site specific basis.

It is important to stress that the use of potassium iodide in a radiation emergency is not a panacea in that it does not block the uptake of other radionuclides and does not protect against external radiation. Furthermore, its use needs to be balanced against the cost and effectiveness of other protective measures such as sheltering and evacuation. This recommendation is made in full recognition of the potential positive effects of the drug, action by the FDA permitting KI over-the-counter sales, and the authority of State and local health officials to elect to distribute and use the drug based on the specific needs of individual sites.

The use of KI is effective as a thyroidal blocking agent in reducing accumulation by the thyroid gland of radioiodine which has entered the body through inhalation or ingestion. Radioiodine accumulation in the thyroid can be reduced to less than 10 percent of what it would be without a blocking agent by a daily oral intake of (130 milligrams for adults, 65 milligrams for infants) KI providing administration is started before or immediately after the exposure to the radioiodine, and treatment continues for at least 48 hours beyond the time of the last exposure. This effectiveness decreases to less than 50 percent blocking of the radioiodine uptake, if administration of the KI is delayed until 4 hours after an acute ingestion or inhalation.

It is recognized that the options on distribution and use of KI for thyroidal blocking to protect the public health and safety resides with the State and, in some cases, local health authorities. Therefore, with the exception of Federal agency and utility personnel, the decision for use of KI during an actual emergency by the general public is the responsibility of these authorities. In deciding whether to distribute and use KI for the general population, these authorities must consider a number of factors.

One of the considerations in deciding whether to implement the distribution and use of KI for the general population is that KI blocking effectively reduces the radiation exposure of only the thyroid gland. While this is an important contribution to the health and safety of the individual, it is not nearly as effective as measures which protect the total body of the individual from radioactivity. Both in-place sheltering and precautionary evacuations can reduce the exposure to the thyroid and total body. The use of KI for thyroidal blocking is not an effective means by itself for protecting individuals from the radioactivity in an airborne release resulting from a nuclear power plant accident and, therefore, should only be considered in conjunction with sheltering, evacuation, or other protective methods.

The Food and Drug Administration (FDA) has evaluated the medical and radiological risks of administering KI for thyroidal blocking under these emergency conditions and has concluded that it is safe and effective and has approved over-the-counter sale of the drug for this purpose. FDA guidance states that risks from the short term use of relatively low doses of KI for thyroidal blocking in a radiation emergency are outweighed by the risks of radioiodine induced thyroid nodules or cancer at a projected dose to the thyroid gland of 25 rem or greater. Since FDA has authorized the non-prescription sale of KI, it is legally available to individuals who, based on their own personal analysis, choose to have the drug immediately available.

Other considerations and problems to be evaluated by the State and local authorities in deciding whether to institute this program include: (1) Whether the KI should be distributed to the population before an accident occurs or as soon as possible after an accident occurs; (2) whether the risks of exposure to radioactivity will be lower if the evacuation of the general population is initiated or if the general population is sheltered and the administration of KI initiated; (3) how the KI will be distributed during the emergency; (4) what medical assistance will be available to assist the individuals who may have some adverse reaction to KI; (5) how medical authorities will advise the population to take KI and under what circumstances this advice will be given; (6) if KI is predistributed, what assumptions should be made about its actual availability and use in the event of an incident. (7) how the authorities will provide KI to transient populations; and (8) whether use of other respiratory protection (e.g., dust masks, or breathing through wet towels) may be equally effective, especially in conjunction with sheltering.

In summary, the use of KI to prevent radioiodine from accumulating in the thyroid gland can be an effective ancillary protective action during a nuclear power plant accident. However, many factors make stockpiling and/or pre-distribution to the general public questionable. Whether KI should be stockpiled and distributed to the general public around a particular site depends on local conditions. Additionally, decisions on its use or the use of alternative protective measures during an emergency depends on accident and environmental conditions that may prevail at the time. Any decision by State and local authorities to use KI should be based on the conditions and site environment for the specific operating commercial nuclear power plant and should include detailed plans for distribution, administration, and medical assistance. The following references are intended to assist State and local authorities in decisions related to use of KI.

1. National Council on Radiation Protection and Measures (NCRP), Protection of the Thyroid Gland in the Event of Releases of Radioiodine. NCRP Report No. 55, August 1, 1977.

2. Food and Drug Administration (HEW), Potassium Iodide as a Thyroid-Blocking Agent in a Radiation Emergency. 43 FR 58798, December 15, 1978.

3. Halperin, J. A., B. Shleien, S. E. Kahana, and J. M. Bilstad, Background Material for the Development of the Food and Drug Administration's Recommendations on Thyroid-Blocking with Potassium Iodide, FDA 81-8158, U.S. Dept. of Health and Human Services (March 1981).

4. Food and Drug Administration, Potassium Iodide as a Thyroid-Blocking Agent in a Radiation Emergency: Final Recommendations on Use. (Notice of Availability) 47 FR 28158, June 29, 1982.

5. Food and Drug Administration, Potassium Iodide as a Thyroid-Blocking Agent in a Radiation Emergency: Recommendations on Use. (April 1982) Prepared by the Bureau of Radiological Health and Bureau of Drugs, Food and Drug Administration, Department of Health and Human Services.

6. Nuclear Regulatory Commission, Examination of the Use of Potassium Iodide (KI) As an Emergency Protective Measure for Nuclear Reactor Accidents (March 1980). Prepared by Sandia National Laboratories for the NRC.

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

February 8, 1985

MEMORANDUM FOR: John A. Hind, Director
Division of Radiation Safety and Safeguards
Region III

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

SUBJECT: FEMA EXERCISE REPORT ON THE NOVEMBER 28, 1984 EXERCISE OF THE OFFSITE RADIOLOGICAL EMERGENCY PREPAREDNESS PLANS FOR THE PERRY NUCLEAR POWER PLANT

The enclosed memorandum from Richard W. Krimm, Assistant Associate Director, Office of Natural and Technological Hazards Programs, FEMA, dated January 31, 1985, forwards FEMA's exercise report of the November 28, 1984 full participation exercise for the Perry Nuclear Power Plant. There were no Category A deficiencies identified; however, there were Category B deficiencies identified for the State of Ohio and the Counties of Lake, Ashtabula and Geauga which require correction. FEMA Region V will provide a copy of its report to the State of Ohio and request a schedule of corrective actions. The FEMA analysis of the State's schedule of corrective actions will be forwarded to you when received.

It is recommended that you transmit the FEMA report to the applicant and request the applicant to coordinate with State and local emergency planning authorities to ensure that the deficiencies identified by FEMA for the November 28, 1984, exercise at Perry are corrected.

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

Enclosure:
Memo to E. L. Jordan from
R. W. Krimm dtd. 1/31/85

cc: See page 2

cc w/cover memo only:

J. M. Taylor, IE
R. H. Vollmer, IE
E. L. Jordan, IE
S. A. Schwartz, IE
J. G. Partlow, IE
C. R. Van Niel, IE
F. Kantor, IE
R. S. Wilkerson, FEMA
J. Stefano, NRR
C. P. Woodhead, ELD
C. J. Paperiello, Region III

cc w/attachments:

D. J. Perrotti, IE

Federal Emergency Management Agency

Washington, D.C. 20472

JAN 31 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 Report of the November 28, 1984, Exercise of the Offsite Radiological Emergency Preparedness (REP) Plans for the Perry Nuclear Power Plant

Attached are two copies of the Exercise Report of the November 28, 1984, joint exercise of the offsite REP plans for the Perry Nuclear Power Plant. This was a full participation exercise for the State of Ohio, and the Counties of Lake, Ashtabula, and Geauga. The report, dated January 18, 1985, was prepared by the Federal Emergency Management Agency (FEMA), Region V.

FEMA Region V will provide a copy of this report to the State of Ohio and request a schedule of corrective actions. As soon as we receive and analyze the response, we will send you our determination.

If you have any questions, please contact Mr. Robert S. Wilkerson, Chief, Technological Hazards Division, at 287-0200.

Attachments
As Stated

EXERCISE REPORT

PERRY NUCLEAR POWER PLANT

CLEVELAND ELECTRIC ILLUMINATING COMPANY

JOINT EXERCISE

Location of the Plant: North Perry Village, Ohio

Exercise Date: November 28, 1984

Date of Report: January 18, 1985

Participants Included: The State of Ohio, the Counties of Lake, Ashtabula and Geauga. All in a full participation mode.

FEDERAL EMERGENCY MANAGEMENT AGENCY
REGION V
NATURAL AND TECHNOLOGICAL HAZARDS DIVISION
TECHNOLOGICAL HAZARDS BRANCH
300 SOUTH WACKER DRIVE
CHICAGO, ILLINOIS 60606

Table of Contents

I. EXERCISE SUMMARY

A. STATE OF OHIO

Key State agencies were notified by the Ohio Disaster Services Agency (OSDA). An up-to-date call list was utilized with the time of agency notification and agency names recorded by the user. The capability to maintain staffing around the clock was demonstrated at the State EOC through double staffing, however, at the EOF, neither double staffing nor a roster was observed.

The ODSA Deputy Director had overall responsibility for the EOC with the EOC Controller responsible for continuous EOC coordination. Briefings were held each hour for updating the EOC staff on plant conditions and the various organizations' activities. Security to the State EOC was efficiently established.

The EOC was fully equipped, well lighted and had all the necessary amenities. In the Radiological Assessment Center, telephones were placed too near the typewriter so that phone messages were sometimes difficult to hear. The status board, "Major Emergency Log", located in the front of the EOC operations room was updated with Key events and could be used to indicate and monitor County EOC's and field activities.

The five-way telephone line between the utility, the County EOC's and the State EOC is new and experienced operational problems during the exercise. The State EOC staff can communicate with Federal agencies, EOF, media center, EBS station, County EOC's, radiological monitoring teams, contiguous states and Canada.

The plume model used for dose assessments from release data and from field measurements functioned well. Results were within a factor of two when compared to plant calculations; this being in part due to decisions whether to make direct calculations or to interpolate from tables. Field monitoring team information was written on slips of paper and posted on the wall map. It is recommended that the Ohio Environmental Protection Agency (OEPA) review their procedures for handling and displaying field monitoring team information.

At 1223 the EOC staff was notified by the utility of a "GENERAL EMERGENCY" at the plant. At 1233 the State concurred with the plant's recommended protective actions and contacted the Counties. The activation of the Prompt Alert and Notification system is a County responsibility. The decision making ability of the Ohio Departments of Agriculture and Health and OEPA was clearly demonstrated. A knowledge of their roles and responsibilities was indicated by their performance. The ability of these agencies to provide ingestion pathway protective action recommendations was clear and accurately demonstrated.

The media center at the State EOC was fully equipped. Briefings were accurate and complete.

At the JPIC the utility, State and Counties demonstrated clearly that they are prepared to handle a coordinated information program. Accuracy and coordination were evident. However, protective action recommendations were not presented in terms of landmarks or familiar boudaries as the County EBS messages were not distributed at the JPIC.

The field monitoring team was quickly mobilized from the National Guard Armory at Worthington, Ohio. All the equipment for field monitoring was contained in the OEPA or ODSA Kits. ODSA personnel took radiation readings and air samples and OEPA personnel sampled water, vegetation and soil. It was noted that the OEPA person was not familiar with his sampling procedures. Increased training for the OEPA member is needed. A milk sample was collected by the Department of Health in Lake County. It is recommended that the person wear gloves (not in the Kit) when taking samples to reduce the risk of cross contamination of milk samples.

Mobilization and staffing at the EOF by the ODSA and ODOH were demonstrated as described in the State plan. The State did not demonstrate around the clock staffing at the EOF. It is recommended the State demonstrate around the clock staffing at the EOF during the next exercise.

The scenario was adequate and provided sufficient activity for the State to demonstrate objectives scheduled for demonstration during the Perry Nuclear Power Plant exercise.

The Radiological Laboratory staff are professionally trained, have attended several radiochemistry short courses and have on-the-job experience in preparation and analyzing environmental samples.

B. Lake County

The ability to mobilize the emergency response staff and activate the EOC was demonstrated by implementing the call lists described by the plan.

The EOC was fully staffed by 1025 after declaration of the "ALERT". Around the clock staffing was demonstrated by double staffing and a presentation of a roster of staff members who could support the emergency response.

The Lake County Board of Commissioners demonstrated the ability to coordinate activities and make decisive emergency response decisions to protect the affected population.

The temporary location of the EOC at the Willoughby Police Department provided the amenities necessary to support the emergency response activities. Displays such as maps, charts and other projections were frequently used by the staff in implementing their response procedures.

The capability to communicate via the five-way dedicated telephone was inhibited by the occasional malfunctioning of that system. Commercial telephone was used as an alternate means of communication. The problems with the five-way dedicated telephone should be resolved so that it becomes more reliable. Backup systems were utilized to maintain effective communications throughout the exercise.

The ability to alert the public within the 10-mile EPZ and disseminate an initial instructional message was demonstrated within the 15 minute time constraint. At the declaration of "GENERAL EMERGENCY", with sheltering as the protective action recommendation, Lake County, in concurrance with the State, Ashtabula and Geauga Counties, activated a silent test of the sirens and provided the EBS station with an appropriate message for transmission.

Two events during the exercise required the formulation and distribution of appropriate instructions to the public, in a timely fashion. In both instances, instructions, including all pertinent and required information were drafted at the Lake County EOC and relayed to the EBS Station within fifteen minutes.

The organizational ability and resources necessary to manage an orderly evacuation of the plume EPZ were demonstrated by the County. There was activity in the field and appropriate resources were identified and activated in the EOC.

The ability to deal with impediments to evacuation such as inclement weather or traffic obstructions was demonstrated through the identification of appropriate resources needed such as tow trucks, snowplows and so on.

Access control points were activated and the resources needed to adequately man them were identified, thereby demonstrating the ability to control access to evacuated areas. As conditions warranted, access control functions were reassessed throughout the exercise. One access control point was demonstrated in the field at the intersection of Highways 86 and 166 by two Sheriff's Deputies and County Engineer personnel with traffic barricades and cones. It was noted that the access control points utilized in the EOC are different from those in the plan.

The organizational ability and resources necessary to effect an orderly evacuation of schools within the plume EPZ was procedurely demonstrated through the notification of the two school district superintendents. Buses, including special buses for the mobility impaired, were identified and placed on a standby status. Actual evacuation of personnel was not an exercise objective.

The ability to continuously monitor and control exposure of emergency workers was demonstrated through the issuance of TLD's and 0-200 R range dosimeters to emergency workers in the field. Emergency workers were aware of the limitation of their dose rates as well as what to do if their dose rates were exceeded. Workers were instructed to take hourly readings but were not provided record cards to accomplish this. Missing from these monitoring kits were low and mid range dosimeters.

Lake County dispatched a Public Information Officer to the Joint Public Information Center to coordinate news releases. This staff member had access to the necessary county emergency response information and demonstrated an ability to coordinate this information with the respective officials. Protective action recommendations at the JPIC were not presented in terms of landmarks or familiar boundaries.

The demonstration of radiological monitoring was accomplished in detail. The personnel demonstrated thorough training and knowledge of procedures.

The South High School in Willoughby is sufficient to be used as a mass care reception center. The leadership of government and agencies involved should have a working knowledge of the total operation and be trained accordingly.

The Worker Decontamination Center was demonstrated by the processing of one vehicle and one individual through the operation. A high level of prior training was evident.

A medical drill was conducted during this exercise. The ambulance crew from the Perry Township Fire Department was trained and properly equipped with protective clothing to handle a contaminated victim at the nuclear power station.

The Lake County Memorial Hospital East has a specifically prepared and equipped decontamination area to treat contaminated injured individuals. The Emergency Center staff including doctors, nurses, maintenance and security staff demonstrated appropriate procedures in responding to the needs of contaminated individuals. They precluded the contaminates from being carried to other portions of the hospital.

C. Ashtabula County

The County demonstrated the ability to promptly mobilize staff and activate facilities. Activation of the EOC staff, through a pager system and telephone call-up, was initiated at the "ALERT" classification. Key personnel were activated at the "UNUSUAL EVENT."

The Key County officials had responded to the EOC during this initial notification. The remaining EOC staff had been instructed to report to the EOC dispatcher as a result of the "ALERT" classification. The EOC was fully staffed by Key County personnel and representatives of the organizations as reflected in the plan.

Around the clock staffing capability was demonstrated through the actual shift change of some individuals, double staffing for others, and the provision of rosters of relief individuals for those organizations which did not replace or double staff for this purpose.

The Ashtabula County Commissioners and the Disaster Services Agency Coordinator demonstrated the ability to make decisions and to coordinate emergency activities. The EOC staff received periodic briefings by the Commissioner and was included in the decisionmaking, with major decisions being coordinated between the County Commissioners and the DSA Coordinator.

The EOC has functional office equipment, communications equipment and adequate supplies. The EOC staff was familiar with the operation of the equipment and how to post and display relevant information. The visual displays included maps that depicted the reception, congregate care centers, evacuation routes, radiological monitoring points and populations by evacuation areas. There was a status board which was clearly visible to the EOC working group. It was kept up to date and supplemented by the periodic briefings of the Commissioner.

The County's capability to communicate with all appropriate locations was demonstrated through the existence and use of three-way and five-way dedicated telephone lines within the EOC. The single three-way line is for communications between the County and the adjacent Geauga and Lake Counties. The seperate five-way line is for communications between the three Counties (Ashtabula, Lake and Geauga), the utility and ODSA. Technical problems were experienced with the operation of the five-way line. The Ashtabula County Amateur Radio Club, in addition to regular commercial telephones and a pager system for key County personnel, supplements the communications system.

The ability to alert the public within the 10-mile EPZ, and disseminate an initial instructional message, within fifteen minutes was demonstrated with coordination among the three affected counties of Ashtabula, Geauga and Lake. The Lake County EOC was responsible, after the aforementioned consultations, for the initial contact with EBS and coordination of activation of the sirens for the three Counties.

There was a limited demonstration of the evacuation of six senior citizens, via privately owned vehicles, from within the EPZ to the reception congregate care center at Conneaut, Ohio. The responsible organizations in the EOC actively monitored the groups arrival, processing and departure from the center.

Additionally, immediate and concise data was available and posted regarding information on busses available for township's and schools, as well as fire department ambulances and other means for transportation. The responsible EOC staff were in contact with their respective field personnel. The manning of access control points was graphically displayed in the EOC. One traffic control point (intersection of Routes 534 and 307) was activated and manned during the exercise. the traffic control officer at the control point and the responsible EOC staff were knowledgeable of their responsibilities for traffic control and access in and out of the sheltered area.

The EOC staff demonstrated the organizational ability and resources necessary to deal with impediments to evacuation. The staff planned the dispatch of police units to maintain traffic control points. The county engineer reported that County tow vehicles were on standby for impediment removal, Ashtabula County Engineer traffic control equipment was organized and telephone communications between the EOC and the highway garage was tested for operability. The County sent signs to Routes 307 and 534 where the traffic control point had been activated. Throughout the exercise, roads that were being closed were posted, along with traffic control points, in the EOC.

The objective to procedurally demonstrate the organizational ability and resources necessary to effect an orderly evacuation of schools within the plume EPZ was demonstrated. There is only one affected school district in Ashtabula County. The EOC coordinated with the school district regarding the alerting of the school bus drivers and preparation of buses for potential evacuations. They coordinated the simulated relocation of Madison students to Ashtabula City Schools.

The policeman manning the access control point was issued a self reading 0-200R dosimeter and TLD prior to his assignment to the traffic control point. He did not have low or mid range dosimeters. The individual was aware of the maximum dose allowed without authorization and the proper procedures for reading the dosimeter and recording the exposure. However, there were no reports to the EOC, other than his arrival, because of the short period of time the traffic control point was manned.

There was a demonstration of Ashtabula County's ability to provide advance coordination of information released from the JPIC as evidenced by the County's coordination with the State, Geauga and Lake Counties. The County Commissioners, utilizing the dedicated three party conference telephone, discussed with Geauga and Lake Counties all information that was to be released to the public. Information released at the JPIC did not include common landmarks and boundaries.

There was a demonstration of procedures for registration and radiological monitoring of evacuees at the reception and congregate care center at the Conneaut High School. The American Red Cross registered seven individuals at the center. There were five teams of radiological monitors present from the Conneaut Fire Department. The teams conducted the monitoring of incoming vehicles and evacuees for possible radiation contamination and operated the two decontamination units that were operational in the center. A high level of prior training was evident.

The Conneaut High School Reception and Congregate Care Center is well equipped and includes the amenities that are necessary for the mass care of evacuees. The County in conjunction with other County agencies and volunteer and private sector organizations have established written agreements on the staffing, provision of beds and bedding, feeding, etc, that becomes necessary for the activation and operation of the center.

Personnel of the Saybrook Fire Department demonstrated equipment and procedures for decontamination of emergency workers, equipment and vehicles. The Saybrook Fire Station should be reevaluated as a vehicle and equipment decontamination center. The station's drain water runs into a storm sewer which empties into a creek and could thereby cause spreading of the contamination. Further, the station is equipped with only one shower. This shower reportedly empties into a septic field which backs-up after limited use. The station does not maintain separate bathroom facilities for males and females. The department is well equipped with geigher counters, TLDs and self reading dosimeters, protective clothing, etc.

The Saybrook Fire Department Emergency Rescue Squad demonstrated ambulance personnel procedures for the handling of contaminated injured individuals. The individual, after being injured by a contaminated vehicle, was given immediate emergency first aid and procedurally decontaminated, wrapped in disposable blankets and transported to a hospital for treatment. The Emergency Rescue squad wore protective clothing and had the necessary dosimetry.

There was a demonstration of hospital procedures for handling injured and contaminated individuals as demonstrated by emergency room staff of the Ashtabula County Medical Center. The hospital has effective two-way radio communications with incoming emergency ambulances which will be transporting contaminated injured individuals. The hospital team was attired in protective clothing and wore TLDs and self reading dosimeters.

It was observed that the emergency room staff had to improvise the means to attempt to decontaminate the patient. This was because the necessary equipment (i.e., whole body decontaminations trays, waste water retention barrels, floor and hallway matting, faucet hoses, etc.) was not available and there were no means for completely segregating incoming contaminated injured patients from the rest of the emergency room population.

D. Geauga County

Geauga County received notification of an "ALERT" at the PNPP at 0809. Using call lists and an automatic dialer they mobilized, staffed and activated the County EOC, a reception center and an emergency worker decontamination center. The EOC staff did not verify notification messages upon receipt.

Shift changes, double staffing and rosters were used to demonstrate around the clock staffing capability at the EOC, the reception center and the emergency worker decontamination center.

The President of the County Commission, the executive group and the operations room staff demonstrated the ability to make decisions and to coordinate emergency activities.

The temporary EOC was adequate for conducting emergency operations. Maps and other displays were available and used throughout the exercise. The one reception center facility that was opened for the purpose of this exercise appeared appropriate for its designated use.

The multiple hot line systems, commercial telephones, and radio systems in the EOC, adjacent communication rooms and the sheriff dispatch center enabled the EOC personnel to communicate with all appropriate locations, organizations and with field personnel. Technical problems were experienced with the operation of the five-way telephone.

A message was prepared for release over the emergency broadcast system. Its release, coordinated with adjacent Counties to coincide with the activation of the siren system, was accomplished by Lake County after receipt of the State's concurrence with the utilities protective action recommendation.

The EOC staff had sufficient resources available, both personnel and material, to manage an orderly evacuation of the County area within the plume EPZ. This was demonstrated in the EOC.

The EOC staff had lists of all publicly owned equipment available to maintain open roadways in the event of an evacuation. It is recommended that privately owned tow trucks, etc., particularly from Thompson Township should be included in the resource inventory.

Geauga County personnel established a traffic control point at the intersection of Ohio Highways 86 and 166. Other control points were identified on maps within the EOC. The EOC staff was aware of protective actions being taken by the other Counties. They were not aware of what control points the other Counties had established. All Counties should coordinate their traffic control responses.

EOC personnel had lists of mobility impaired persons and others needing transportation. Lists of wheel chair lift vans and buses to provide transportation for these people were availalable in the EOC.

Buses were available to accomplish the evacuation of the Ledgemont schools. The procedures to accomplish this evacuation were demonstrated by the EOC staff.

The Radiological Office had high range dosimeters and TLDs available for field staff. Low and mid range dosimeters are not available to field workers. All emergency workers would not be provided dosimetry when deployed near the plume EPZ. Some emergency workers, near but not in the plume EPZ, would not be issued dosimetry.

Public information releases from the JPIC did not describe protective action instructions in terms of landmarks and familiar boundries. Geauga county personnel in the JPIC used the hot line and a fax machine to coordinate information to be released from the JPIC.

A reception center was opened at the Berkshire High School and four evacuees were processed at the center. They were registered twice, once by reception center personnel and once by the Red Cross. Evacuees should be registered only once. The monitors at the center were slow and unsure of their equipment. Present monitors should be given additional training and extensive practice in the use of their equipment.

The Berkshire High School can accomodate 500 people for shelter and feed 250 people at a sitting.

An emergency worker decontamination center was opened at the Hambden Fire Station. Decontamination procedures were described to the evaluator and an emergency worker was processed to demonstrate this capability.

II. Exercise Report

A. Introduction

1. Exercise Background

The November 28, 1984 exercise was the first demonstration of the radiological emergency response plans to a simulated accident at the Perry Nuclear Power Station. In conjunction with the utility, the State of Ohio as well as Lake, Ashtabula and Geauga counties implemented their plans in a full participation mode. This report represents the offsite evaluation of this exercise.

2. Participating and Non-Participating State and Local Governments

The Emergency Planning Zone (EPZ) of the Perry Nuclear Plant include portions of Lake, Ashtabula, and Geauga Counties in Ohio. The exercise scenario necessitated emergency response activities in all three of these counties. The counties of Cuyahoga, Summit, Portage, Trumbull, and Mahoning in Ohio and Erie, Crawford and Mercer Counties in Pennsylvania are within the 50 mile Injestion pathway were not included in this exercise.

3. List of Evaluators

There were a total of twenty three (23) Federal evaluators observing the offfsite exercise activities. Composition of the offsite team consist of seven (7) evaluators from the Federal Emergency Management Agency, Region V, five (5) from the Argonne National Laboratory, and eleven (11) Regional Assistance Committee representatives.

The assignments of these evaluators, by name, their organization and location during the exercise were as follows.

Wallace Weaver, FEMA, Exercise Director

<u>State of Ohio</u>

Ed Robinson, FEMA (Team Leader)
James Kraeger, FDA
Peter Tedeschi, EPA
Steve Kouba, DOE
Anna Hill, USDA
*Marsha Smith, NRC
Larry Jensen, EPA
Cindy Boggs-Mayes, DOE

Lake County

Bob Shapiro, FEMA (Team Leader)
Norman Stoner, DOT
Walter O'Keefe, FEMA (Red Cross Representative)
*Marsha Smith, NRC
Bob Behrman, HHS
Bill Gasper, Argonne

Ashtabula County

Woodie Curtis, FEMA (Team Leader)
Sheila Huff, DOT
*Eileen Courter, FEMA
Bill Knoerzer, Argonne
Gordon Veerman, Argonne

Geauga County

Ray Kellogg, FEMA (Team Leader)
Harvey Bushby, Argonne
*Eileen Courter, FEMA
Bernard Williams, DOT
Don Hulet, Argonne

*These names appear twice on this list because of multiple assignments at the JPIC.

The onsite evaluation of the utilities exercise activities was conducted by the Nuclear Regulatory Commission (NRC).

4. Evaluation Criteria

The State of Ohio as well as the Lake, Ashtabula and Geauga County Radiological Emergency Response Plans were evaluated during the November 28, 1984, Perry Nuclear Power Station Exercise. This was to ascertain the capability of implementation should an accident occur at this facility. The exercise was conducted in accordance with the requirements set forth by 44 CFR Part 350 dated September 28, 1983. The exercise was evaluated commensurate with the August 5, 1983 memorandum "Procedural Policy on Radiological Emergency Preparedness Plan Reviews, Exercise Observations and Evaluations and Interim Findings" and with the criteria established in "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in support of Nuclear Power Plants" (NUREG 0654, FEMA REP-1, Revision 1). For the purpose of evaluating this exercise, all evaluators utilized the "Modular Format for Uniformity of Radiological Emergency Preparedness Exercise Observations and Evaluations" dated June 1983.

5. Summary of Exercise Objectives

The exercise objectives were carefully developed as a result of close coordination and planning between the Federal Emergency Management Agency, Region V, Cleveland Electric Illuminating, Ohio DSA, and the DSA representatives from Lake, Ashtabula and Geauga Counties. The objectives were selected from a list of thirty five (35) exercise objectives contained in Tab M of the "Modular Format for Uniformity and Radiological Emergency Preparedness Exercise Observations and Evaluations" dated June 1983. There were twenty (20) objectives selected for demonstration by the State of Ohio, nineteen (19) objectives selected for Lake County, nineteen (19) objectives selected fer Ashtabula County, and eighteen (18) objectives selected for Geauga County. The objectives were utilized to develop the exercise scenario with the purpose of enabling evaluation of portions of the plan.

The objectives necessitated the State to activate their Emergency Operations Center, to provide dose assessment, activate the radiological monitoring teams, dispatch the mobile communications van as well as dispatch State representatives to the utilities Emergency Operations Facility and the Joint Public Information Center. The County objectives necessitated the activation of their respective Emergency Operation Centers and to provide direction and control functions. The objectives also required close coordination between counties for media releases and especially to activate the public alert and notification system which during this exercise involved a silent siren test with coordinated Emergency Broadcast System (EBS) releases. Medical drills at selected hospitals and relocation and decontamination facilities were also exercise objectives.

A complete list of State and County November 28, 1984 exercise objectives are provided in paragraph 9 of this section.

6. Summary of the Scenario

The following narrative reflects the highlights of the scenario utilized during the November 28, 1984 exercise depicting those incidents which necessitated off-site activities. A more complete narrative summary with time frames describing the Perry Nuclear Power Plant (PNPP) activities with corresponding State and County desired responses is provided as an attachment to this report.

At approximately 0717 an inplant fire requires assistance of the Perry Township Fire Department and because the fire lasted more than ten (10) minutes PNPP declared an "UNUSUAL EVENT". At about 0805 an "ALERT" is declared due to a spent fuel handling accident onsite. This necessitated activation of the County Emergency Operation Centers. At 0930 PNPP requests local assistance to transport a contaminated injured individual to the Lake County Memorial Hospital East. By 1030 a complete loss of functions necessary to complete a hot shutdown escalates the situation to a "SITE AREA EMERGENCY." This activated the utilities Emergency Operations Facility and the Joint Public Information Center. At approximately 12:15PM ~~0200~~ due to a loss of two fission product barriers with a potential loss of a third, PNPP declared a "GENERAL EMERGENCY".

The situation at the plant deteriorates and by 1315, a major release of radiation begins as detected by offsite radiation monitoring teams. Protective action recommendations are up graded at this point. By about 1500, the plant regains control of the situation and the radiation release is terminated. Background radiation levels return to normal and the emergency classification level is downgraded and by 1645 the exercise is terminated.

7. Description of State and Local Resources Planned To Be Used In The Exercise

For the purpose of fulfilling the exercise objectives, Ohio activated its Emergency Operations Center, activated the Health Department Laboratory, dispatched the Communications Van, radiological monitoring teams, State representatives to the utilities Emergency Operations Facility and the Joint Public Information Center. Lake, Ashtabula and Geauga Counties established their Emergency Operations Centers and provided County representation to the Joint Public Information Center. Lake County provided assess control at Route 306 and 20, activated a congregate care center at the Willoughby South High School, a decontamination center at the Auburn Career Center in Painesville and demonstrated ambulance service to and medical care at the Lake County Memorial Hospital East in Painesville. Ashtabula County established a congregate care center at the Conneaut High School in Conneaut, opened a decontamination center at the Saybrook Township Fire Department in Ashtabula and provided access control at Routes 534 and 307 and demonstrated ambulance service to and medical care at the Ashtabula County Medical Center. Geauga County established a congregate care center in the Berkshire High School in Burton, a decontamination center at the Hambden Fire Department in Hambden and provided access control at Routes 86 and 166.

8. Deficiencies Noted in Past Exercises Which Persist

The November 28, 1984 exercise was the initial exercise conducted for the Perry Nuclear Power Plant and therefore there were no previous exercise deficiencies to re-evaluate.

9. Exercise Objectives Planned For This Exercise

The objectives that were selected for this exercise were selected by the State and Counties from the thirty five (35) standard objectives contained in TAB "M" of the "Modular Format For Uniformity of Radiological Emergency Preparedness Exercise Observations and Evaluations" dated June, 1983. The objective numbers listed below correlate to TAB "M".

a. State of Ohio

1. Demonstrate ability to mobilize staff and activate facilities promptly.

2. Demonstrate ability to fully staff facilities and maintain staffing around the clock.

3. Demonstrate ability to make decisions and to coordinate emergency activities.

4. Demonstrate adequacy of facilities and displays to support emergency operations.

5. Demonstrate ability to communicate with all appropriate locations, organizations, and field personnel.

6. Demonstrate ability to mobilize and deploy field monitoring teams in a timely fashion.

7. Demonstrate appropriate equipment and procedures for determining ambient radiation levels.

8. Demonstrate appropriate equipment and procedures for measurement of airborne radioiodine concentrations as low as 10-7 uCi/CC in the presence of noble gases.

9. Demonstrate appropriate equipment and procedures for collection, transport and analysis of samples of soil, vegetation, snow, water, and milk.

10. Demonstrate ability to project dosage to the public via plume exposure, based on plant and field data, and to determine appropriate protective measures, based on PAG's, available shelter, evacuation time estimates, and all other appropriate factors.

11. Demonstrate ability to project dosage to the public via ingestion pathway exposure, based on field data, and to determine appropriate protective measures, based on PAGs and other relevant factors.

12. Demonstrate ability to implement protective actions for ingestion pathway hazards.

13. Demonstrate ability to alert the public within the 10-mile EPZ, and disseminate an initial instructional message, within 15 minutes.

14. Demonstrate ability to formulate and distribute appropriate instructions to the public, in a timely fashion.

20. Demonstrate ability to continuously monitor and control emergency worker exposure.

24. Demonstrate ability to brief the media in a clear, accurate and timely manner.

25. Demonstrate ability to provide advance coordination of information released.

26. Demonstrate ability to establish and operate rumor control in a coordinated fashion.

32. Demonstrate ability to identify need for, request and obtain federal assistance.

34. Demonstrate ability to estimate total population exposure.

b. Lake County

1. Demonstrate ability to mobilize staff and activate facilities promptly.

2. Demonstrate ability to fully staff facilities and maintain staffing around the clock.

3. Demonstrate ability to make decisions and to coordinate emergency activities.

4. Demonstrate adequacy of facilities and displays to support emergency operations.

5. Demonstrate ability to communicate with all appropriate locations, organizations, and field personnel.

13. Demonstrate ability to alert the public within the 10-mile EPZ, and disseminate an initial instructional message, within 15 minutes.

14. Demonstrate ability to formulate and distribute appropriate instructions to the public, in a timely fashion.

15. Demonstrate the organizational ability and resources necessary to manage an orderly evacuation of all or part of the plume EPZ.

16. Demonstrate the organizational ability and resources necessary to deal with impediments to evacuation, as inclement weather or traffic obstructions.

17. Demonstrate the organizational abililty and resources necessary to control access to an evacuated area.

19. Demonstrate the organizational ability and resources necessary to effect an orderly evacuation of schools within the plume EPZ.

20. Demonstrate ability to continuously monitor and control emergency worker exposure.

24. Demonstrate ability to brief the media in a clear, accurate and timely manner.

25. Demonstrate ability to provide advance coordination of information released.

27. Demonstrate adequacy of procedures for registration and radiological monitoring of evacuees.

28. Demonstrate adequacy of facilities for mass care of evacuees.

29. Demonstrate adequate equipment and procedures for decontamination of emergency workers, equipment and vehicles.

30. Demonstrate adequacy of ambulance facilities and procedures for handling contaminated individuals.

31. Demonstrate adequacy of hospital facilities and procedures for handling contaminated individuals.

c. Ashtabula County

1. Demonstrate ability to mobilize staff and activate facilities promptly.

2. Demonstrate ability to fully staff facilities and maintain staffing around the clock.

3. Demonstrate ability to make decisions and to coordinate emergency activities.

4. Demonstrate adequacy of facilities and displays to support emergency operations.

5. Demonstrate ability to communicate with all appropriate locations, organizations, and field personnel.

13. Demonstrate ability to alert the public within the 10-mile EPZ, and disseminate an initial instructional message, within 15 minutes.

14. Demonstrate ability to formulate and distribute appropriate instructions to the public, in a timely fashion.

15. Demonstrate the organizational ability and resources necessary to manage an orderly evacuation of all or part of the plume EPZ.

16. Demonstrate the organizational ability and resources necessary to deal with impediments to evacuation, as inclement weather or traffic obstructions.

17. Demonstrate the organizational abililty and resources necessary to control access to an evacuated area.

19. Demonstrate the organizational ability and resources necessary to effect an orderly evacuation of schools within the plume EPZ.

20. Demonstrate ability to continuously monitor and control emergency worker exposure.

24. Demonstrate ability to brief the media in a clear, accurate and timely manner.

25. Demonstrate ability to provide advance coordination of information released.

27. Demonstrate adequacy of procedures for registration and radiological monitoring of evacuees.

28. Demonstrate adequacy of facilities for mass care of evacuees.

29. Demonstrate adequate equipment and procedures for decontamination of emergency workers, equipment and vehicles.

30. Demonstrate adequacy of ambulance facilities and procedures for handling contaminated individuals.

31. Demonstrate adequacy of hospital facilities and procedures for handling contaminated individuals.

d. Geauga County

1. Demonstrate ability to mobilize staff and activate facilities promptly.

2. Demonstrate ability to fully staff facilities and maintain staffing around the clock.

3. Demonstrate ability to make decisions and to coordinate emergency activities.

4. Demonstrate adequacy of facilities and displays to support emergency operations.

5. Demonstrate ability to communicate with all appropriate locations, organizations, and field personnel.

13. Demonstrate ability to alert the public within the 10-mile EPZ, and disseminate an initial instructional message, within 15 minutes.

14. Demonstrate ability to formulate and distribute appropriate instructions to the public, in a timely fashion.

15. Demonstrate the organizational ability and resources necessary to manage an orderly evacuation of all or part of the plume EPZ.

16. Demonstrate the organizational ability and resources necessary to deal with impediments to evacuation, as inclement weather or traffic obstructions.

17. Demonstrate the organizational abililty and resources necessary to control access to an evacuated area.

18. Demonstrate the organizational ability and resources necessary to effect an orderly evacuation of mobililty-impaired individuals within the plume EPZ.

19. Demonstrate the organizational ability and resources necessary to effect an orderly evacuation of schools within the plume EPZ.

20. Demonstrate ability to continuously monitor and control emergency worker exposure.

24. Demonstrate ability to brief the media in a clear, accurate and timely manner.

25. Demonstrate ability to provide advance coordination of information released.

27. Demonstrate adequacy of procedures for registration and radiological monitoring of evacuees.

28. Demonstrate adequacy of facilities for mass care of evacuees.

29. Demonstrate adequate equipment and procedures for decontamination of emergency workers, equipment and vehicles.

10. Exercise Objectives Still To Be Effectively Achieved

The following list of objectives were not successfully demonstrated during this exercise. These objectives have one or more deficiencies noted during this exercise and are required to be re-demonstrated during the next exercise. This list follows TAB "M" of the "Modular Format for Uniformity of Radiological Emergency Preparedness Exercise Observations and Evaluations" dated June 1983.

a. State of Ohio

2. Demonstrate ability to fully staff facilities and maintain staffing around the clock.

5. Demonstrate ability to communicate with all appropriate locations, organizations, and field personnel.

9. Demonstrate appropriate equipment and procedures for collection, transport and analysis of samples of soil, vegetation, snow, water, and milk.

25. Demonstrate ability to provide advance coordination of information released.

b. Lake County

4. Demonstrate adequacy of facilities and displays to support emergency operations.

5. Demonstrate ability to communicate with all appropriate locations, organizations, and field personnel.

20. Demonstrate ability to continuously monitor and control emergency worker exposure.

25. Demonstrate ability to provide advance coordination of information released.

27. Demonstrate adequacy of procedures for registration and radiological monitoring of evacuees.

c. Ashtabula County

5. Demonstrate ability to communicate with all appropriate locations, organizations, and field personnel.

20. Demonstrate ability to continuously monitor and control emergency worker exposure.

25. Demonstrate ability to provide advance coordination of information released.

29. Demonstrate adequate equipment and procedures for decontamination of emergency workers, equipment and vehicles.

31. Demonstrate adequacy of hospital facilities and procedures for handling contaminated individuals.

d. Geauga County

5. Demonstrate ability to communicate with all appropriate locations, organizations, and field personnel.

20. Demonstrate ability to continuously monitor and control emergency worker exposure.

25. Demonstrate ability to provide advance coordination of information released.

The following list of exercise objectives were not selected for demonstration during this exercise. They should be demonstrated during a future exercise. The appropriate jurisdictions to demonstrate each objective are noted.

12. Demonstrate ability to implement protective actions for ingestion pathway hazards. (Lake, Ashtabula and Geauga Counties)

18. Demonstrate the organizational ability and resources necessary to effect an orderly evacuation of mobility-impaired individuals within the plume EPZ. (Lake and Ashtabula Counties)

21. Demonstrate the ability to make the decision, based on predetermined criteria, whether to issue KI to emergency workers and/or the general population. (State of Ohio, Lake, Ashtabula and Geauga Counties)

22. Demonstrate the ability to supply and administer KI, once the decison has been made to do so. (State of Ohio, Lake, Ashtabula and Geauga Counties)

23. Demonstrate ability to effect an orderly evacuation of onsite personnel. (Lake County)

30. Demonstrate adequacy of ambulance facilities and procedure for handling contaminated individuals. (Geauga County)

31. Demonstrate adequacy of hospital facilities and procedures for handling contaminated individuals. (Geauga County)

33. Demonstrate ability to relocate to and operate the alternate EOF/EOC. (Not applicable to EOC's outside the 10-mile EPZ)

35. Demonstrate ability to determine and implement appropriate measures for controlled recovery and reentry. (State of Ohio, Lake, Ashtabula and Geauga Counties)

B. Narrative

1. State of Ohio

a. Emergency Operations Center (EOC)

1. Activation and Staffing

The Ohio Disaster Services Agency (ODSA) was notified of an incident at the Perry Nuclear Power Plant by a dedicated five-way telephone link. This telephone system connects the State, Lake, Geauga, and Ashtabula Counties and the Utility. This five-way link is monitored at the State EOC on a 24 hour basis. The EOC staff was mobilized by use of a written call list. The Governor's office was contacted by the Deputy Director early in the exercise and the Governor's aid was present in the EOC throughout the afternoon. All the necessary organizations were present and double staffing was used to show the capability for around the clock staffing. The staff displayed a knowledge of their respective duties and showed an interest in what had to be accomplished during the exercise.

2. Emergency Operations Management

The ODSA Deputy Director assumed overall responsibility for the EOC with the EOC Controller being responsible for continuous EOC coordination. Starting at 1030, hourly briefings were held for updating EOC staff on plant conditions and the various organizations' activities. Major announcements were made to the staff between the briefings.

The Assistant Radiological Emergency Coordinator contacted FEMA and DOE at 1031 with support being requested for field monitoring and incident assessment. State Department of Health personnel contacted EPA, FDA and NRC but did not request assistance.

Security to the State EOC was established and was effective.

3. Facilities

The EOC has adequate furniture, space and lighting. Other items, such as telephones and in/out baskets for emergency response participation at the EOC were provided.

Dormitories, lockers, cots and showers are available in the EOC, as is a dining and kitchen facility which would provide the necessary support for extended operations. These facilities, to be used by EOC emergency response participants, are well maintained.

TV monitoring screens were located at participant work stations, providing continuous and clear visibility of an updated status board. All appropriate maps were promptly updated with all significant events and the maps were clearly visible.

Overall, the Ohio EOC Operations room is fully-equipped. A separate pre-designated room was made available to major response functions: the Media Center was located on the first floor of the Armory and the Radiological Assessment Center was in a room adjacent to the EOC operations room in the basement. All rooms were appropriate in size and adequately equipped according to function.

Recommendation: The status board, "Major Emergency Log", located in the front of the main EOC room could be used in a different manner. This board was updated with key events and could be used to indicate and monitor County EOC and field activities as well.

4. Communications

The capability exists to communicate by a five-way dedicated telephone link with the local EOC staffs and the utility with radio as a backup system. The State EOC staff can communicate with the Federal Emergency Management Agency by telephone, teletype and radio. The capability exists to communicate with the EOF, Media Center, EBS Station, radiological monitoring teams, contiguous states and Canada.

Conferencing is available with the local EOC staffs and utility through the use of the five-way telephone link. Operational problems were experienced with this five-way telphone link. Backup communications functioned effectively and communications were not inhibited during the exercise.

The data-fax was used for hardcopy between the State EOC and the media center. The EOC staff was kept well informed on the news releases goint out of the media center.

Deficiency: F.1.b. The five-way telephone link proved unreliable during the exercise.

Recommendation: This telephone link is the primary and most efficient means of communication among the utility, State and Counties. The design features should be evaluated, the operational problems should be corrected and the system periodically tested to maintain its effectiveness.

5. Dose Assessment and Protective Actions

Field monitoring data was written on slips of papter and attached to the field monitoring points map. Additional analysis of the field monitoring team data should be completed to observe consistency with projected dose calculations and to recommend recovery/reentry guidance.

Recommendation: Field monitoring team data should be recorded on the specially designed chart available in the dose assessment room.

6. Public Alerting and Instruction

At 1223 the EOC staff received a message from the utility that the status was being upgraded to a "GENERAL EMERGENCY" and at 1233 the State EOC staff concurred with the plant and called the Counties and told them to activate the prompt alert and notification system.

The activation of the prompt alert and notification system is a County function. This includes contacting the EBS station.

7. Protective Action

The decision-making ability of the Ohio Departments of Agriculture and Health and OEPA was clearly demonstrated. Their knowledge of their roles and responsibilities was indicated by their performance. The ability of these agency representatives to provide ingestion pathway protective actions recommendations was accurately demonstrated. Their responses to ingestion pathway questions were timely.

All protective action recommendations were appropriate and in accordance with written and available SOP's and EPA protective action guidelines. The recommendations were appropriately based on data from the Utility and released after approved by the Governor's representative.

The ODOH has designed and implemented a computer information system which was valuable as a source for current information relating to Grade A Dairy, food warehouses, refrigerated stored food facilities, grain storage and medical facilities. The data base can also provide local support personnel data. The ODOH has a well-trained staff capable of using this system. The data base provides a 24 hour a day contact capability with local Health Department representatives. This information system allows data retrieval and sorting which would be useful to the County EOC's during a radiological emergency.

8. Radiological Control

This is addressed in section c.5.: Field Monitoring: Field Team Exposure Control.

9. Media Relations

A separate room, away from the EOC facility was pre-designated for press briefings. This room was fully equipped with chairs, displays (Perry NPS reactor system) and maps (evacuation routes, sector maps, 10 mile EPZ, congregate care).

Telephones, typewriters and work areas provided for use by the News Media would be made available upon request (A sign was posted to indicate this.)

Briefings were accurate and complete with News Bulletins and current public emergency information posted at designated locations. Few technical terms were used and all that were used were explained clearly and accurately. This includes the explanation of implemented protections, such as: embargo, quarantine of poultry and livestock, no movement of livestock and feed within a 10 mile radius of the PNPP, the use of stored feed only for animals, sheltering and no crops to be eaten.

Press Packets were provided to the Media which contained complete background information, including definitions of radiological terms, which could be used to clarify any questions.

The briefings concluded with a question and answer period. This function was performed in timely and professional manner.

10. Recovery and Reentry

This was not an exercise objective and therefore not evaluated.

11. Scenario (as it relates to the State EOC)

The scenario was adequate. It allowed for appropriate play to demonstrate objectives observed at the Ohio EOC.

The activities were sufficient and realistic and EOC participants responded in a timely manner, appropriate to their respective roles and responsibilities.

b. Emergency Operations Facility: (EOF)

1. Activation and Staffing

Representatives from the State and each of the three affected Counties (Lake, Geauga and Ashtabula) were activated using existing procedures and reported to the utility's EOF by 1157. Their reporting time was a function of their dispatch location. The State Department of Health representative was dispatched by helicopter from the Columbus area. For the Counties, notification occurred when the utility declared a "SITE AREA EMERGENCY". The State was notified at "ALERT".

During exercise play, both the ODSA and ODOH representatives manned the EOF as per the State Plan. The observer was told this was a double staffing demonstration. This conflict must be resolved. From the exercise play, it would be difficult for only one individual to answer the phone and coordinate with the utility.

Deficiency: A.4. Around the clock staffing capability at the EOF was not demonstrated as outlined in the State of Ohio plan.

Recommendation: At the next exercise, two State individuals should staff the EOF as specified in the State Plan, with demonstration of an appropriate shift change.

2. Facilities

With the exception of the portable radio supplied to the State by the utility, all EOF facilities used by the State of Ohio were adequate for the function performed by the State. The inoperative radio would be used to monitor and transmit/receive "as needed" with the State field radiological monitoring teams. The radio is owned and maintained by the utility. It is suggested the radio be repaired or replaced with an operable instrument. This is made as a suggestion based on the fact that ODSA personnel located in a mobile communication van (for this exercise, located at Ledgmont School south of Thompson, Ohio) had the primary responsibility for directing the field teams and relaying monitoring data back to the EOC in Worthington. Therefore, the repair of the radio at the State's position in the EOF is not critical to field team operations.

3. Communications

The State of Ohio representatives located in EOF had access to commercial and dedicated telephones to communicate with the State EOC located in Worthington and each of the three County EOC's. Conferencing capabilities were available on the five-way EOC conferencing line. Also available in the EOF was a telefax machine to communicate to the JPIC and State EOC as needed.

4. Informational Functions

Not demonstrated by the State in the utility's EOF.

5. Rumor Control

Not demonstrated by the State in the utility's EOF.

6. Dose Assessment and Protection Action Recommendations

Not demonstrated by the State in the utility's EOF.

7. Scenario (as it relates to the EOF)

The scenario demonstrated that the State personnel assigned to the EOF could serve as a communication link between the utility and several governmental agencies in the State and the three effected Counties.

c. Field Monitoring

1. Field Team Mobilization

Ohio Disaster Services Agency (ODSA) personnel were mobilized from the Armory in Worthington and were activated at 0810 after the "ALERT" was declared. Team members were notified at their work place. The ODSA personnel met the OEPA team member at the State Highway Patrol Station in Chardon. This was a real time mobilization and dispatching of the field team.

The ODSA team members responded promptly and left the Armory within one half an hour after they were notified. The teams were not advised of current plant conditions and meterological data at their departure.

The teams carried their radiological procedures in the kit with them. These procedures included control and equipment check procedures. The division of responsibilities among the team members was clearly defined. Personnel indicated that there is a system established to activate the staff twenty four hours a day.

2. Field Team Equipment

The plan contains a list of all the equipment for the monitoring teams, and they had all the equipment on the list. The Kits contained a checklist of the equipment. The radiation monitoring equipment Kit was complete with Ebuline instruments and included a G-M counter, ionization chamber, alpha detector, single channel analyzer, NaI probe, and a micro R meter. This equipment was adequate for their emergency response.

One of the radiation monitoring teams had a station wagon while the other two teams had vans. (A new van has been ordered). Since the station wagon did not have enough room to transport four people (two ODSA, one OEPA and one observer) plus equipment, the team moved in two vehicles.

Air sampling equipment included a generator and a pump to pull the air through the filters. The team had charcoal and silver zeolite cartridges and fiberglass filters for air samples. These three filter media types are adequate to measure radionuclides which might be released.

An EPA Sampling Kit was available and contained all the necessary equipment to take soil, water, and vegetation samples. A milk sample was taken by a Department of Health person the day after the exercise.

Additional equipment included two G-M detectors (Civil Defense) which could be used as back up and a micro R meter (NaI detector) which can be used to measure low levels of radioactivity.

All of the radiation detection equipment (except for the back up GM detectors) is calibrated every three months and were last calibrated November 21, 1984. The back up G-M detectors are calibrated every six months.

3. Field Team Technical Operations

The radiation detection equipment was properly checked at the Armory in Worthington, and a Cesium check source was included in the Kit to periodically check the instruments. The teams were supplied with a procedure to follow for the collection and counting of air samples which were followed. The ODSA personnel know how to operate the instruments correctly.

Air samples were properly collected and if the survey instruments indicated elevated background radiation level, the sample was counted outside of the plume. This was done with the help of ODSA personnel in the communications van. They told the team where to go to count their sample.

The instrumentation which the team had avilable was adequate to measure at least 10-7 uCi/cc of iodine in air.

When the team crossed the County line from Geauga to Lake County, the micro R meter and its speaker was turned on so that the team had an idea what the background radiation level was at all times. This is a good radiation monitoring practice.

The team members appeared to be familiar with the monitoring points, but the three maps given to the field teams were not adequate. One was a topographic map, but it was too hard to read. The second was a zeroxed map (small), but the road names were not legible. The third map was the best, but it was only a map of Lake County and not all of the monitoring points were shown since some of them are in other Counties.

Recommendation: One map, similar to the Lake County map, including all three Counties and all the monitoring points should be given to the field monitoring teams.

The collection of water, vegetation and soil samples was demonstrated, but the OEPA person was not familiar with his procedures. He did not add HNO3 to his water sample as was indicated. After he collected his vegetation sample he did not wipe off his shears to avoid cross contaminating future samples. He was going to take his soil sample on the ground where he had taken his vegetation sample. This would not be a good idea since most of the fallout would have been on the vegetation. Also he did not wipe off his shovel to avoid cross contaminating future samples.

The observer also noted that the OEPA person was not familiar with metric units. The tape measure in the Kit was graduated in millimeters and inches, and he was not sure how many millimeters are in a centimeter or how many inches are in a meter. The procedures should include both the Metric and English system to avoid any confusion.

Deficiency: I.8. The OEPA member of the field monitoring team was not familiar with his sampling procedures.

Recommendation: The field monitoring team members should be adequately trained in the proper sampling procedures and demonstrate them at the next full participation exercise in the state of Ohio.

A milk sample was collected the day after the exercise by the Department of Health. Care had to be taken with two different aspects: bacterial cross contamination and radioactivity

cross contamination. The bacterial cross contamination issue was adequately covered in the procedures, but there was little concern for radioactivity cross contamination.

Recommendation: The ODOH Sampling Kit should be equipped with gloves which should be used and the procedures should address radioactivity cross contamination.

4. Field Team Communications:

Radio contact was established with the communication van set up at Ledgemont School. All the communications with the monitoring teams went through the van. Radio communications were maintained throughout the exercise and no dead spots were noted. The teams also had a portable Motorola hand-held radio which could be used to talk to the communications van if their main radio failed.

5. Field Team Exposure Control

The team had the appropriate protective equipment and knew how and when to use it. All team members were given three dosimeters of different ranges and TLD badges. The ODSA personnel received their TLD badges in Worthington and the OEPA person received his TLD badge from the radiological analysts at the County DSA.

ODSA personnel brought along a dosimeter charger, record keeping cards and TLDs. Record Keeping cards were supplied to the OEPA person along with TLD badges. Dosimeter readings were called in to the communications van frequently (approximately every 15 minutes).

All team members knew their maximum doses and what to do if this level were exceeded. They were also aware of procedures for decontamination (when and where to go).

6. Scenario (as it relates to field monitoring)

The scenario adequately provided activity for the field monitoring teams to exercise the use of their equipment and was realistic in terms of activities that would be required of field monitoring teams in a real event.

It provided a demonstration of capability to mobilize and deploy field monitoring teams in a timely fashion and it provided for a demonstration of appropriate equipment and procedures for determining ambient radiation levels. It also provided a demonstration of capability to continuously monitor and control emergency worker exposure.

d. Joint Public Information Center (JPIC)

1. Activation and Staffing

The utility began to activate the JPIC at 0830 and declared the facility-operational upon the arrival of State and County PIO's. State and County PIO's reported to their EOC's and upon orders from the EOC they then reported to the JPIC. Twenty-four hour capability was not demonstrated, but interviews indicated backup staff was available for extended operation for all Counties and the State. Twenty-four hour notification was available through the use of telephone, radio and tone alert radios.

PIOs displayed knowledge of procedures through smooth coordination of all information. Clerical staff were available to assist in the preparation of messages, typing, copying, etc.

2. Facilities

Facilities at the Lakeland Community College were spacious, well-lighted and fully equipped. An auditorium with a capacity for 350 persons was available. Equipment included audio-visual equipment and closed circuit television available 24 hours a day.

The State and Local PIOs had their own fully equipped room to confer in and to develop media releases. Media representatives were provided with space in the lobby of the auditorium to set up lights and cameras for interviews. Back up power was available for emergency exit lighting only. However, CEI maintained continuous repair capability with a line truck and personnel on duty at the local sub-station.

Maps indicating Counties and sub areas, emergency planning zones, and reception center locations were available in the PIO conference room. Emergency planning area maps, schematics of the reactor and emergency classification levels were displayed and utilized during press briefings in the auditorium.

The JPIC is located outside the 10 mile EPZ in Kirtland, Ohio. Private security staff were onsite by 0830 and access control was maintained throughout the exercise.

3. Communications

Permanent phone lines and jacks are housed above the suspended ceiling in the JPIC. Phones are stored on-site. The State of Ohio provided radio communications through a base station in Columbus and a mobile communications van.

4. Informational Functions -

Media Kits were available from the ODSA and contained basic background information on nuclear power plants, radiation, population of the areas and relocation centers.

Three briefings were held approximately an hour and a half apart. They were accurate and complete, however, due to questions from the media they were long and led to PIOs being slow in relaying updates to the media. This could be remedied by the use of more frequent briefings of a shorter duration. However, all appropriate instructions to the public were provided in timely manner through the EBS releases from the Lake County EOC.

Maps and schematics were used to demonstrate and explain technical data and protective action recommendations. Hard copy of news releases were available at each briefing. PIOs from the State and three Counties conferred on all information received. They coordinated the content of the press releases by telephone with their respective EOC's.

5. Public Instruction

Pre-scripted messages were used at first. Later messages were then drafted to meet evolving needs as outlined in the scenario. The rumor control center and the media briefings expanded on messages provided over EBS.

Protective action recommendations, as discussed in the JPIC, were not presented in terms of familiar boundaries or landmarks. The EBS messages released from the Lake County EOC did include this information. However, the EBS messages were not distributed to the media at the JPIC.

Deficiency: E.7. Information contained in the EBS messages was not released at the JPIC, e.g. presentation of protective action recommendations in terms of familiar landmarks or boundaries.

Recommendation: All messages released through the EBS should be provided to the JPIC for distribution to the media.

6. Rumor Control

Rumor control was manned by the utility and located next to the media monitoring location. The state rumor control number was tested and found to be functioning. This number was given to the media during press briefings and also to CEI personnel manning the utility rumor control facility.

The rumor control center was equipped with closed-circut television for viewing of all press conferences, thus providing the rumor control staff with a constant updating of official information.

Television monitors were in place in the media monitoring location in order to monitor information the public was receiving. This monitoring capability was available for the utility and state and local personnel. Each set was equipped with a video recording machine. A fourth, closed-circut set was also equipped with a VCR. News broadcasts could be reviewed for accuracy at any time. In the event of an extended emergency, there was provision for a monitoring of print media.

7. Scenario (as it relates to the JPIC)

The scenario was extensive enough to draw media attention in a number of geographical areas. The EOCs were required to deal with media requests for information, and as dictated by procedures, referred those requests to the

JPIC. Media at the JPIC were interested in learning how activities would be handled in an actual disaster andseeking information for immediate use in evening broadcasts and next-day newspaper coverage. This added realism, as spokespeople knew their comments would actually receive media coverage.

e. Radiological Laboratory

1. Equipment and Staffing

The laboratory staff are professionally trained, have attended several radiochemistry short courses and have on-the-job experience in preparation and analyzing environmental samples. Sufficient staff is available for 24 hour staffing. To improve the laboratory proficiency and efficiency in radionuclide analysis and data distribution, the following recommendations are submitted.

Recommendation: The Radiological Laboratory should consider:

i. Procurement of commercially available calibration standards for gamma isotopic analysis;

ii. Installation of HEPA filters on the hood for radioiodine analysis;

iii. Procurement of a back-up multi-channel analyzer to supplement the existing detector in case of system failure or repair down time;

iv. Procurement of instrumentation to survey incoming samples; and
v. A computer link for data transmission with the Radiological Assessment Center and/or the Radiological Health Unit offices.

2. Technical Operations

The Standard Operating Procedures (SOP's) should be documented for the delivery, receipt and initial screening of environmental samples received from Nuclear Power Plant emergencies. SOP's exist for sample preparation and analysis. Sample storage areas are adequate to accumodate numerous samples received from emergency situations. Sample analytical results are transmitted by telephone or by courier to the Radiological Assessment Center.

3. Scenario (as it relates to the Radiological Laboratory)

Radionuclide sample analysis was not demonstrated during the exercise. As planned, the ability to analyze samples was demonstrated out of sequence with the scenario.

2. Lake County

a. Emergency Operation Center (EOC)

1. Activation and Staffing

There is continuous monitoring by the Willoughby Police Department of a five-way dedicated telephone between the State, utility, Lake, Ashtabula and Geauga Counties. This phone is used for initial notification as well as coordinating emergency response activities. During the exercise this telephone malfunctioned frequently and necessitated the use of commercial lines as an alternate means of communication.

At about 0725 the utility advised Ohio and the three counties that they had declared an "UNUSUAL EVENT" and at about 0805 situations at the plant warranted an "ALERT" status. The EOC was then activated according to plan by use of the call list and by 1025 staffing was complete.

Around the clock staffing was demonstrated by double staffing of the majority of the emergency response staff and the presentation of a roster of staff members who would provide a continuous staffing capability.

2. Emergency Operations Management

The President of the Lake County Board of Commissioners actively supported by another County Commissioner and the Director of the Lake County Disaster Services Agency was effectively in charge of the emergency response activities. This executive group conducted frequent staff briefings to ensure that the EOC staff was continously abreast of the status of the emergency situation.

These briefings were supported by individual reports from EOC staff representatives who discussed the status of their organization's response. To further coordinate the emergency response activities, messages were distributed

within the EOC. A status board highlighted the various emergency conditions. An additional status board was maintained, which depicted the activities of each of the organizations providing support to the response. Hardcopy of message logs and status board entries were presented to the staff.

Actions were taken at 1313 to activate the reception center located at South High School. The details of how this center functioned is discussed in a subsequent section of this report.

3. Facilities

The EOC is located temporarily in the basement of the City of Willoughby Police Department. The facility is spacious and provided the necessary ammenties to support the emergency response staff. A permanent underground facility is under construction and will house the day to day operations of the Lake County Disaster Services Agency as well as the EOC functions.

The EOC has separate but yet relatively open areas for the executive board, communications, and State support functions. Appropriate maps, charts and status boards were conspiciously displayed in all portions of the EOC and were frequently used to support the emergency response activities.

4. Communications

Primary communications between Lake County, the utility, the State, Ashtabula and Geauga County is via the five-way dedicated line, which is continuously monitored by the EOC communication staff, following the "ALERT" classification notification. A malfunction of the phone line caused problems with the five-way during the early stages of the exercise. At approximately 1030 the problem was rectified and the dedicated line worked well until the "GENERAL EMERGENCY" declaration at 1227. During the down times in the dedicated line, commercial lines were utilized by establishing two open conference call lines among the five stations simultaneously. This back-up system proved to be adequate in supporting the primary communications system.

The County Commissioners in the three Counties had at their disposal a three-way dedicated line. There were some problems keeping this system operational during the early parts of the exercise. The cause of the malfunction was determined and corrected and the phones performed fine throughout the remainder of the day. Commercial phones were used as back-up when the primary dedicated lines were down. The implementation of the back-up systems for both the five-way and the three-way dedicated lines proved to be a valuable training activity.

Communications between the JPIC and the EOC is via two systems. Both systems, a hardcopy telefax machine and commercial phone lines, were used equally throughout the exercise.

The telefax machine, operating over commercial phone lines, provided rapid transmission of clearly legible documents throughout the day. Upon completion of the new EOC, a dedicated phone line will be installed to the JPIC.

Commercial phone lines are used to communicate with the decontamination center, the reception center, schools and the hospital. The fire department radio net provides communication with the ambulances.

Deficiency: F.1.b. The five-way telephone link proved unreliable during the exercise.

Recommendation: This telephone link is the primary and most efficient means of communication among the utility, State and Counties. The design features should be evaluated, the operational problems corrected and the system periodically tested to maintain its effectiveness.

5. Dose Assessment and Protective Action Recommendations

Dose assessment and protective action recommendations are functions performed by the State and therefore not evaluated at the County.

6. Public Alerting and Instructions

The Lake County EOC is responsible for numerous public alerting functions. During the exercise two separate events required the demonstration of these functions. At 1227 a message was received from the EOF upgrading the emergency

classification level to a "GENERAL EMERGENCY" and recommending protective actions. Upon concurrence by the State with the utility's recommendation and with the mutual agreement of Ashtabula and Geauga Counties, the sirens were given a silent test at 1240 by Lake County officials. An EBS message was jointly drafted by the Counties using prescripted messages by the County DSA Director and phoned into the EBS station by the County DSA Director at 1242. The message notified the public of the recommendation to shelter in place 0-2 miles 360 degrees and sectors D,E,F,G,H (subareas 1,2,3) to 5 miles. This all occurred within the 15 minute requirement of NUREG-0654 criteria item E.6.

The second EBS message was required when the EOF recommended an evacuation at 1330. Again prescripted text was used to draft the message with the State and Counties in agreement. This message notified the public of the recommendation to evacuate 0-2 miles 360 degrees; evacuate sectors F,G,H 2-3 miles (subareas 1,2,3), shelter to 3 miles the remaining sectors 360 degrees; shelter sectors F,G,H 3-7 miles (subareas 4,5,6).

EBS messages contained all the appropriate information necessitated by the protective action recommendations. Messages were clear and concise, describing areas in terms of familiar landmarks and boundaries. Sheltering instructions included guidance on procedures and methods to use as well as instructions to transients. The evacuation message included information and instructions to parents on the evacuation of the affected schools.

The EBS station was directed to repeat each instructional message at 10 minute intervals for a period of 30 minutes. Also concurrent with the notification of the EBS station a call was placed to the NOAA providing them with the information.

In one instance the recording of radiological release data omitted some minor details. Although this did not have an impact on the exercise more care should be taken in recording this information.

Deficiency: 0.4.j. Radiological release data forms were not completely filled out.

Recommendation: Procedures for recording information transmitted by telephone should be reviewed to insure that all data is properly recorded and those individuals utilizing the forms will recognize the fact that data is missing.

7. Protective Action

The implementation of protective actions dealing with evacuation and access control were demonstrated by the County EOC staff. One access control point was demonstrated in the field. Control points were activated promptly at the "GENERAL EMERGENCY" declaration when sheltering was recommended. As the events escalated during the "GENERAL EMERGENCY", control points were either activated or relocated as necessary in order to control the traffic flow in the restricted areas. Estimates on expected traffic volumes were discussed along with the resources available to assure that evacuation routes would remain open in the event of any impediments to traffic flow. The EOC staff provided lists of resources to be utilized for the traffic and access control functions.

8. Radiological Exposure Control

The Lake County EOC is outside the plume EPZ and therefore it is not required that personal dosimetry equipment be issued to emergency workers. However, available at the EOC was a limited number of dosimetry kits, containing two high-range (0-200R) self-reading dosimeters, an emergency worker TLD (issued by the utility) and record forms. These kits would be issued to any of the EOC staff who were required to go into the EPZ.

Information concerning decontamination and the maximum allowable dose allowed without authorization was available at the EOC.

9. Media Relations

Some news media reported to the Lake County EOC at the beginning of the exercise requesting access to the EOC for picture taking and interviews. They were referred to the JPIC for coordinated news releases and invited to return later to the EOC for pictures and interviews. A number of the media returned and were permitted access to specific areas to accomplish their tasks.

Lake County dispatched a Public Information Officer (PIO) to the JPIC who coordinated news releases. PIO's from the State and three Counties conferred on all information received. They coordinated the content of the press releases by telephone with their respective EOC's.

Protective action recommendations, as discussed in the JPIC, were not presented in terms of familiar boundaries or landmarks. The EBS messages released from the Lake County EOC did include this information. However, the EBS messages were not distributed to the media at the JPIC.

Deficiency: E.7. Information contained in the EBS messages was not released at the JPIC, e.g. presentation of protective action recommendations in terms of familiar landmarks or boundaries.

Recommendation: All messages released through the EBS should be provided to the JPIC for distribution to the media.

10. Recovery and Reentry

Recovery and reentry procedures were not objectives of this exercise and therefore were not evaluated.

11. Scenario

The scenario initiated and sustained an adequate amount of activity for the Lake County EOC to demonstrate their emergency response functions. All required agencies were involved, contributing to the overall response within the EOC.

It was noted that "free play" problems were introduced to various EOC staff members to stimulate additional realistic problems that the staff may encounter during a real incident.

b. Field Activity

1. Traffic and Access Control

Two Lake County Sheriff's Deputies in two cars arrived at the traffic control point at the intersection of US 20 and Bowhall Road at 1256.

Officers at the intersection and in the EOC identified this intersection as Perimeter Control Point 19. This location is not a designated traffic control point or perimeter control point in the 10/8/84 version of the Lake County plan. However it is a designated perimeter control point on maps used in the EOC and by the Officers in the field.

Both officers had previously been on standby at the Sheriff's Office awaiting deployment. Each carried with them the appropriate portions of the Lake County Plan. They were able to identify the major evacuation routes (and direction) and were able to identify the reception centers.

In addition to their normal two-way radios one officer carried a portable radio which enabled them to talk directly with the Lake County EOC communications center. This radio generally worked well, but there were periods when commmunication was interrupted by interference. The officers were aware of the PNPP emergency status and were updated via radio by the EOC. The officers explained how they could communicate with other police officers manning other points via their police radio bands.

At 1340 a dump truck from the County Engineer's Department arrived at the site with type 1 barricades and traffic cones.

While the EOC was aware of the protective action being taken by the other counties, they were not aware of the perimeter control points in other counties and were not aware of which sites the other counties were blocking at any particular time.

Recommendation: All the Counties should coordinate their access control points and maintain their EOC map with the other Counties' information.

Overall, the Sheriff's deputies' demonstrated a working knowledge of their assignment, the plan, and this exercise.

Deficiency: J.10.j. Lake County was using a perimeter control map different from that shown in its 10/8/84 version of the plan.

Recommendation: The perimeter control point map in the 10/8/84 version of the Lake County plan and the map in use at the Lake County EOC should be reviewed to determine which is the appropriate map to be used. Both the plan and the EOC should utilize the one appropriate map.

2. Special Evacuation Problems

Although clearing roadway obstructions was not demonstrated in the field, the officer's noted that three primary tow trucks and 13 secondary tow trucks were available on ten minutes notice. The EOC advised the officers that tow truck operators had been notified and were on standby.

3. Route Alerting

Route alerting was not an exercise objective and therefore not demonstrated.

4. Worker Exposure Control

The Sheriff's Deputies were equipped with high range dosimeters and TLD's. They demonstrated how to read and interpret the dosimeters. They knew what their maximum dose limit was and what to do in the event of an excessive dose. They were aware of the decontamination center's function and location. The employees of the County Engineer's Department had simulated dosimeters. It was noted that personnel manning the perimeter control points were not provided with record cards to record their hourly exposure readings. Further they were not supplied with mid-and low range dosimeters.

Deficiency: K.3.a. and K.3.b. Emergency workers in the field did not have mid and low range dosimeters and record keeping cards.

Recommendation: All emergency workers in the field should be equipped with the proper dosimetry and record keeping cards.

5. Scenario (as it relates to access control)

The scenario and the predetermined objectives called for the activation of one perimter control point. This provided adequate activity for Lake County to demonstrate their access control in the field.

c. Medical Support

1. Communications

The ambulance crew had radio contact with the Lake County Memorial Hospital East Emergency Center. They provided the hospital with information such as they were transporting a contaminated victim, the extent of the victim's injuries and the estimated time of arrival at the hospital.

2. Hospital Facilities and Procedures

A health physicist at the hospital was available to continuously monitor the patient as well as the Emergency Center environment. An additional radiation monitoring technician was available to monitor contamination in the specially equipped and specifically prepared decontamination area. The Emergency Center has a special decontamination Kit that met the needs of decontaminating the patient.

The hospital staff was well trained, had adequate supplies and demonstrated the proper techniques in cleansing the patient.

They followed accepted procedures by closing air ducts, removing all access items from the decontamination room in the Emergency Center, laying out yellow herculite over the entire floor area, placing a 15 gallon yellow container at the foot of the stretcher to hold the water that was used to bathe the patient and yellow track containers were provided to hold contaminated items. Hospital personnel demonstrated adequate procedures to protect themselves from contamination and maintain their exposure records.

The Emergency Center has a contract with Radiation Management Corporation to provide back-up assistance if needed.

3. Ambulance Facilities and Procedures

Upon arrival at the PNPP, the ambulance crew were provided with dosimetry Kits by security personnel and escorted to the scene of the accident to pick up the victim. The ambulance crew was adequately dressed with proper clothing (throwaway plastic suits) to protect them from exposure. The ambulance driver prepared the patient area of the ambulance by covering the rear area with yellow herculite.

On-site personnel at the scene of the accident were well managed,i.e., security, and the ambulance crew was well trained to deal with this type of emergency.

The ambulance crew was aware that the lake County Memorial Hospital East has a specially designed and equipped Emergency Center to deal with nuclear contaminated individuals.

Once the patient was delivered to the Emergency Center the appropriate actions were taken by a Plant physicist to check each ambulance crew member for contamination and appropriate disposal was made of all contaminated equipment and clothing. Also the vehicle was thoroughly checked for contamination.

4. Scenario (as it relates to medical support)

The scenario provided sufficient opportunity to evaluate the medical support procedures of the ambulance crew and the hospital staff.

d. Relocation Centers

1. Activation and Staffing

The written plan calls for each agency in the EOC to mobilize their own personnel for activation of the Relocation Center. There were specific rosters and procedures in the EOC for this operation. The Reception Center Manager seemed unsure of relief assignments, however she did indicate that there was a plan for extended operation of the facility.

All other agencies or departments had a continuous rotation policy. The Willoughby Fire Department has a shortage of females to staff the women's shower area. However, they did indicate a mutual aid capability for access to additional female team members trained to assist the operation if necessary.

Deficiency: J.12. The Reception Center Manager did not have sufficient working knowledge of the facility's plan for operation.

Recommendation: The Reception Center Manager and other key personnel should have adequate training to insure a working knowledge of each agency, department and unit capability and resources, as well as the facility's plan for operation.

2. Registration and Monitoring

There was a level of performance demonstrated that indicated the radiation monitors had received intensive training in their duties. Each team member exhibited a high level of knowledge of their assignment. There is indication of cross training in each section of this activity. Registration was handled by well trained staff and volunteers.

3. Congregate Care of Evacuees

The assignment of a Sanitation representative to the Congregate Care Center is good. On a long term operation this person could be assigned to more than one center.

Again, there was uncertainty as to exact procedures for food service. No doubt should exist as to the appropriate control. Training, as noted above, and coordination between the Relocation Manager, the American Red Cross and the Food Service Manager would alleviate this problem.

4. Scenario (as it relates to relocation)

The scenario was adequate to provide Lake County with the opportunity to demonstrate their objectives. Except as noted the relocation center staff exhibited, extensive training and knowledge of their functions.

e. Decontamination

There were two Decontamination Centers. The first, Auburn Training Center, is to be utilized by County workers, law enforcement personnel and County emergency vehicles. The Concord Volunteer Fire Department is well trained in decontamination procedures. The decontamination teams demonstrated knowledge in the proper preparation and procedures for the use of dosimeters and CDV 700 Survey meters. They demonstrated procedures to survey vehicles and individuals.

The second Decon station is in the congregate care center at the South High school. The Willoughby Fire Department Decontamination teams at this facility exhibited a prior training and knowledge of their procedures.

During the demonstration it was noted that posted on the brickheads at each check area was the area's survey meter background count and time and date of the reading. It was apparent that each relief team would know the necessary information to maintain a safe operation.

Both the Concord Volunteer Fire Department and Willoughby Fire Department demonstrated around the clock capability to cover an extended period of time, if necessary.

3. Ashtabula County

a. Emergency Operation Center (EOC)

1. Activation and Staffing

There is a direct communication link to the utility that is manned continuously by the Sheriff's Department. Information on the "UNUSUAL EVENT" was received and key EOC personnel were immediately notified. Individuals verified their notification by telephone and decided to report to the EOC to follow the "UNUSUAL EVENT" and to stay in contact with the utility. At the time of the "ALERT" clasification all notification of EOC staff had been made. The Commissioners based their decision to call in appropriate staff on the information that was received from the utility. The EOC Communications officers used the EOC roster to notify EOC staff to report for duty. The written call list was up to date. By 1134, all EOC staff had arrived (except for the National Guard representative). Staff and organizations monitored their responsibilities on the event. Each person demonstrated a professional attitude and was knowledgeable on Ashtabula County's contingency planning for radiological emergencies.

2. Emergency Operations Management

The County Commissioners, the Emergency Management Coordinator and the EOC staff in general were knowledgeable of their duties.

The Emergency Management Coordinator was knowledgeable of the duties of both himself and the EOC staff. As staffing progressed each staff member referred to a separate file box containing lists, procedures and other information. A copy of the EOC plan was available. Message logs were kept.

A three page message form was determined insufficient for complete message distribution within the EOC. This was supplemented by photocopying additional copies for distribution.

Recommendation: Review the EOC procedures to determine if a new form (more pages and/or a distribution and routing section) would enhance message handling.

The County Commissioner and the SMC were situated in a separate room just off the main EOC room. The overall operation ran smoothly.

3. Facilities

The EOC had functional office equipment, communication equipment and adequate supplies. Visual displays included maps depicting the Ashtabula County reception centers, Evacuation routes in the EPZ, school district shelters and their status, available bus transportation, fire/rescue services,ambulance transportation, radiological monitoring points, and population by evacuation area.

The status board was kept up to date and supplemented with periodic briefings by the Commissioner. Emergency classifiction levels were posted and as needed, information was plotted on the above visual displays.

Information posted on the Population by Evacuation Area Map included numbers of permanent residents, seasonal residents, medical and jail facilities, schools, work force and hotels/motels. Data was further broken down into each sub area.

4. Communications

Various communication methods were employed at the EOC. The five-way dedicated line connected PNPP, ODSA and the three Counties. Another dedicated line connected the three Counties. The five-way link was down for a short time during the morning. During this time a commercial conference phone link was established and utilized. Three status levels were received via the five-way link. County identification and message aknowledgement were completed within the framework of a single phone call.

The main link the EOC staff used for communications was commercial telephone. There are six lines with seventeen extensions. The PIO and rumor control phone was separate from the six lines. A well equipped and manned radio station was used by various EOC staff during the exercise.

The Sheriff's dispatcher was in an adjoining room. The police officer was in contact with his post dispatcher.

A hard copy device for receipt of messages from the JPIC was available. It was reliable and reasonably fast.

Deficiency: F.1.b. The five-way telephone link proved unreliable during the exercise.

Recommendations: This telephone link is the primary and most efficient means of communication among the utility, State and Counties. The design features should be evaluated, the operational problems corrected and the system periodically tested to maintain its effectiveness.

5. Dose Assessment and Protective Action Recommendations

Dose assessment and protective action recommendations are a function of the State and therefore not observed at the County.

6. Public Alerting and Instruction

Through the three-way dedicated phone link the Ashtabula County EOC contributed to the development of an EBS message. The Ashtabula EOC decided a wind shift at 1244 would require an EBS message be formulated. After a three way discussion involving all the Counties, an EBS message was issued at 1248.

Later a second EBS message was formulated and went out at 1351. This message required sheltering. Both the EBS mesage and the accompanying silent siren activation were accomplished at the Lake County EOC.

The population of Ashtabula County in the 10 mile EPZ is covered by sirens. In the event of a siren failure the local Fire Department would be required to do route alerting.

7. Protective Actions

Traffic control points were activated in response to evacuations from other Counties. The Transportation Officer, Sheriff's Department, and Ohio Highway Patrol had complete control and immediate information to deal with and respond to the evacuations. There was no evacuation within Ashtabula County.

Immediate data were available and posted on access control points, all available modes of transportation and means for removing road impediments.

8. Radiological Exposure Control

A traffic control point was established in the field to demonstrate access control. But because he did not remain on station for an extended period of time the EOC staff did not have an opportunity to actively monitor his exposure.

Deficiency: K.3.b. The EOC staff did not have an opportunity to actively monitor emergency worker exposure.

Recommendation: Future exercise scenarios should allow for this objective to be fully demonstrated.

9. Media Relations

Two press releases were formulated by the PIO in conjunction with the County commissioners. They were brief and descriptive of the situation at the EOC during the early stages of the exercise. PIO's from the State and three Counties conferred on all information received. They coordinated the content of the press releases by telephone with their respective EOC's.

About 1030 the JPIC was activated and the Ashtabula County PIO departed for the JPIC. His position was covered by an assistant PIO in the EOC thereby maintaining coverage and contact between the County and the JPIC. The dedicated line and hard copy device performed satisfactorily. A news briefing at the EOC would be held in the chamber or court library on a floor above the EOC room.

Protective action recommendations, as discussed in the JPIC, were not presented in terms of familiar boundaries or landmarks. The EBS messages released from the Lake County EOC did include this information. However, the EBS messages were not distributed to the media at the JPIC.

Deficiency: E.7. Information contained in the EBS messages was not released at the JPIC, e.g. presentation of protective action recommendations in terms of familiar landmarks or boundaries.

Recommendation: All messages released through the EBS should be provided to the JPIC for distribution to the media.

10. Recovery and Reentry

Recovery and reentry procedures were not objectives of this exercise and therefore were not evaluated.

11. Scenario (as it relates to Ashtabula County)

The scenario initiated and sustained an adequate amount of activity for the Ashtabula County EOC to demonstrate their emergency response functions. It was noted that "free play" problems were introduced to various EOC staff members to stimulate additional realistic problems that the staff may encounter during a real incident.

b. Field Activity (Access Control)

1. Traffic and Access Control

A County squad car was dispatched from the County Sheriff's Office. He picked up his instruments, protective clothing and dosimetery equipment at the County EOC. This particular officer was familar with the evacuation routes, relocation center and his purpose for being there. Communication with the EOC and other control points would be via his two way radios. No report other than his arrival was forwarded to the EOC because of the short period of time the Officer spent at the traffic control point. He did know the requirements for generating such reports.

Officers in the EOC and at the control site were aware of the importance of keeping lanes or shoulders open and would generally do this. They did state that at times this may be difficult because of snow or soft shoulders.

The officer demonstrated knowledge of his duties and responsibilities and exhibited a high degree of prior training.

While the EOC was aware of the protective action being taken by the other counties, they were not aware of the perimeter control points in other counties and were not aware of which sites the other counties were blocking at any particular time.

Recommendation: All the Counties should coordinate their access control points and maintain their EOC map with theother Counties information.

2. Special Evacuation Problems

The clearing of traffic would be requested by the traffic control officer in the EOC upon receiving the request from the units in the field. Both the officer in the field and the traffic control officer in the EOC were knowledgeable of these specific procedures.

3. Route Alerting

Route alerting was not an exercise objective and therefore not demonstrated.

4. Worker Exposure Control

The officer that arrived at the control point did have instrumutation and dosimetry. However, he did not have low and mid range dosimeters. He was aware of how to read and log his dose rates.

Deficiency: K.3.a. Emergency workers in the field did not have low and mid range dosimeters.

Recommendation: Emergency workers should be provided with low and mid range dosimeters.

5. Scenario (as it relates to access control)

The scenario was adequate to allow Ashtabula County to demonstrate its procedures for traffic and access control. Future scenarios should allow for greater involvement by the EOC in emergency worker exposure control.

c. Medical Support

1. Communications

There was a demonstration of the capability to receive treat and decontaminate an injured contaminated individual at the Ashtabula County Medical Center, Ashtabula, Ohio. The Hospital Emergency Room staff was provided a written notification at approximately 0845 that a contaminated injured individual from the Saybrook Decontamination Station was enroute to the hospital via ambulance and would arrive at approximately 0905.

A member of the Hospital staff explained that the initial communications regarding incoming patients would normally come from the ambulance crews via the two-way Hospital Emergency Ambulance Reporting Net which is located and monitored in the Hospital's Emergency Room area. Communications with the utility, the County EOC, congregate care facilities, radiological laboratories, etc. is via commercial telephone.

2. Hospital Facilities and Procedures

The Hospital staff's Emergency Room spokesperson was unaware of the availability of a health physicist. It was stated that the Hospital's Disaster Chairman is also the Hospital's Radiation Officer. The Emergency Room staff were equipped with and demonstrated effective training in the use of geigher counter surey meters, TLDs and self reading dosimeters. It was explained by Emergency Room spokespersons that items such as whole body decontamination trays and water retention barrels were unavailable and means for completely segregating contaminated, injured patients from the rest of the hospital's population are presently incomplete.

The staff, through improvisation of unavailable items of equipment and explanations of procedures accepted the incoming injured and contaminated patient and went through the procedures for monitoring, handling, decontamination and treatment of the patient. Additionally they demonstrated procedures for hospital staff Emergency room dress, the issuance of dosimetry (TLDs and self reading), the disposal of contaminated clothing and equipment and were aware of their responsibilities.

Deficiency: L.1. The Hospital Emergency Room staff did not demonstrate all of the equipment necessary to handle a contaminated injured victim.

Recommendation: The State of Ohio should meet with representatives of the Ashtabula County Medical Center to ascertain the availability of appropriate equipment for the handling of a contaminated injured victim.

3. Ambulance Facilities and Procedures

This event was out of sequence with the rest of the exercise, in that the patient went to the medical facility earlier in the day so that the procedures at the hospital could be demonstrated.

Later during the exercise the same patient participated in the demonstration of procedures and handling of a contaminated injured person by ambulance crew. He was put on a ambulance cot and simulated being transported to the hospital.

The ambulance crew was part of the Saybrook Fire Department which took part in this exercise at a decontamination station for emergency workers. The ambulance crew was completely suited in protective clothing and they used their instruments and dosimetery equipment correctly. Once the patient had been given first aid he was placed on the ambulance cot, wrapped in disposable blankets and removed from the area.

The ambulance crew demonstrated prior training in the area of handling contaminated patients.

4. Scenario (as it relates to medical support)

The scenario was sufficiently designed to drive the medical support activities and thus allow an opportunity to demonstrate these procedures.

d. Relocation Centers

1. Activation and Staffing

The reception and congregate care center was located at the Conneaut High School, Conneaut, Ohio. The agencies represented at the center were the County Departments of Welfare and Health and the School District. There was

additional support agency representation from the Conneaut Police and Fire Departments, Red Cross, Brown Memorial Hospital and the Ashtabula County Amateur Radio Club.

A survey of the center's staff indicated that they had been notified of the plant status by their respective agencies via telephone calls to their homes and/or businesses, and were alerted to remain on standby until it became necessary to staff the center. The first staff person (from the Ashtabula County Amateur Radio Club) had arrived at the Center which is in the gymnasium of the school at approximately 1245, after having received notification of the "GENERAL EMERGENCY" at approximately 1228. The Center was fully staffed at approximately 1323.

There was adequate staffing of the Center by agencies represented, with the exception of the County Department of Health and the Amateur Radio Club. These agencies provided only one representative each at the center and were the only two agencies that did not demonstrate a shift change of personnel. The other organizations represented at the center demonstrated shift changes by double staffing and/or provision of rosters of additional individuals, within their organizations, for any additional shifts beyond the normal eight or twelve hours they themselves were expected to serve.

All staff at the center demonstrated knowledge that reflected prior training in their respective responsibilities.

2. Registration and Monitoring

The American Red Cross processed seven evacuees through the registration process at the center with the use of the standard Red Cross shelter registration form. The evacuees, except for one newspaperman from the Cleveland Plain Dealer, were senior citizens that had arrived at the center in several of their private automobiles. The Conneaut Fire Department provided five teams (consisting of three people per team) for radiological monitoring of incoming vehicles and evacuees at the Center. Two of the three person teams were assigned to decontamination and processing of evacuees that may have been found to have levels of

contamination. The decontamination units were setup in the two seperate male and female showering and locker rooms of the gymnasium. The area has sufficient showers (15 and 12 respectively), space to conduct the decontamination process and seperate entrances and exits that allow for the segregation of contaminated individuals away from the rest of the center population. The Conneaut Fire Department had teams of individuals that were assigned as the transportation unit for evacuees without vehicles and needing transportation to other shelter locations.

3. Congregate Care of Evacuees

The Reception/Congregate Care Center at the Conneaut High School is well outside the ten mile EPZ of the PNPP. It was operational as a reception and congregate care center during the exercise. The planned capacity of the center is 149 but could accomodate a larger population if necessary. According to the Center Manager (County Welfare Department) there are seventeen other congregate care centers, which could be activated as conditions warranted.

The American Red Cross have written agreement - responsibility for the feeding of evacuees, provision of cots and blankets and assistance with the management of the reception and congregate care facilities. The facility's routine equipment, supplies, etc. that will be made available for an evacuation are adequate for this purpose. The Brown Memorial Hospital, Conneaut, staffs the center with four nurses to provide immediate emergency care and assistance to evacuees, including the viable handicapped. According to the hospital's spokesperson they are prepared to provide nursing care assistance around the clock at the center if necessary.

The Conneaut Fire/Rescue ambulance remained at the center for any necessary transport of ill and/or injured evacuees. The County Health Department provide an individual for sanitation with additional support personnel to be provided by Health Departments within the County, as necessary. The Conneaut Police Department provided police for building security and traffic control. The school's regular telephone system will be available as necessary. Additional means of communications will be via several pay telephone systems and the two-way Radio Communications nets that are provided by the Ashtabula County Amateur Radio Club and the American Red Cross.

4. Scenario (as it relates to relocation)

The scenario provided an opportunity for Ashtabula County to demonstrate relocation facilities and procedures.

e. Decontamination

The Saybrook Township Fire Department which serves as the decontamination center was activated by orders of the EOC. Once fire department personnel arrived on the scene they set the area up to receive vehicles and personnel. The chief did explain how he would be able to man the facility around the clock. He has 50 volunteer firefighters, 14 of which have been trained with more to be trained.

They demonstrated the procedures for handling a contaminated injured person. The department is well equipped with geigher counters, TLD's and self reading dosimeters, protective clothing, etc. Two survey meters were found defective and some items were missing from the Decontamination Kit. These items are all to be replaced. Energy Radiation Contamination limits for Personnel and Equipment were posted in the checking area. Their knowledge and implementation of procedures indicated a high degree of prior training.

The use of the Saybrook Fire Station as a decontamination center should be reevaluated. The station's drain water runs into a storm sewer which empties into a creek and could thereby cause spreading of the contamination. Further, the station is equipped with only one shower. This shower reportedly empties into a septic field which backs up after limited use. The station does not maintain seperate bathroom facilities for males and females.

Deficiency: K.5.b. The Saybrook Fire Station is not an adequate facility for use as a decontamination center.

Recommendation: An adequate location for the decontamination center should be established and incorporated into the emergency response plans.

4. Geauga County

a. Emergency Operation Center (EOC)

1. Activation and Staffing

The Geauga County EOC was notified of an "UNUSUAL EVENT" at the PNPP by the utility by means of commercial telephone at 0731, as the five-way dedicated line in place for this purpose was not operable until later in the day. This call was not verified.

The "UNUSUAL EVENT" was subsequently cancelled at 0800 but an "ALERT" was initiated via the five-way phone at 0809. This phone is monitored 24 hours a day by the Sheriff's dispatcher.

Mobilization was by an up-to-date call list. However one dispatcher did not state "This is a Drill" when notifying the participants. Staffing called for by the roster board was complete by 1234 hours.

Recommendation: All exercise communications should be initiated with the caveat "This is a drill."

The staff demonstrated adequate training and knowledge of their duties and responsibilities. A roster and double staffing were utilized todemonstrate around the clock staffing capability.

Deficiency: E.1. The notification of "UNUSUAL EVENT" received via comercial telephone was not verified.

Recommendation: The messages received concerning emergency classification should be verified. The procedures should be in place to insure proper message verification.

2. Emergency Operations Management

The President of the County Commissioners was, in accordance with the County plan, in charge of the emergency operations. Periodic staff briefings were held and the operations room staff was involved in the decision making process. The various agencies in the operations room had written checklists and SOP's. Copies of the County plan were available and used as required. Message logs were maintained and messages were reproduced and distributed as appropriate.

3. Facilities

The EOC had sufficient furniture, space, lighting and telephones. Noise was adequately controlled. A headset for the five-way phone helped in this respect.

Backup electrical power was available to operate communications and lighting. The EOC can support personnel or shift. Off shift staff would return home.

4. Communications

Primary communications with the State, other Counties and the utility was by five-way dedicated phones. The five-way link experienced operational problems during the exercise. A three-way dedicated phone was used to connect the County EOC's. In both cases a radio or commercial phone were available for backup. Access to the plant was by the five-way phone with commercial phone as backup. Conferencing was available on both the three-way and five-way systems. The media center also had a dedicated phone with a commerial phone as backup.

Telephone is available for communication with the EBS station, local schools and ambulance service. Radio was available for communication with the ambulances. Radio was the primary system for the hospital with commercial telephone as backup.

Deficiency: F.1.b. The five-way telephone link proved unreliable during the exercise.

Recommendation: This telephone link is the primary and most efficient means of communication among the utility, State and Counties. The design features should be evaluated, the operational problems should be corrected and the system periodically tested to maintain its effectiveness.

5. Dose Assessment and Protective Action Recommendations

Dose Assessment and Protective Action Recommendation is a State responsibility.

6. Public Alerting and Instruction

Following an announcement by the utility that protective actions might be necessary, the executive group discussed the requirements of the public information announcements they would need to prepare. A prescripted message, edited to fit the current situation, was used. The message was clear as to what actions were required.

As the message left the executive group, areas to be evacuated or sheltered were described in terms of distance from the reactor or emergency section sub areas. The messages released to the EBS translated these descriptions to familiar boundries and landmarks. This message included guidance on sheltering methods and instructions for transients. The content of the message was coordinated with Lake and Ashtabula Counties. The release of the message by Lake County coincided with the silent activation of the siren system.

7. Protective Actions

Traffic control points were established at the time the prompt alert and notification system was activated. The Sheriff and other EOC staff indicated there were equipment and personnel standing by to maintain evacuated routes in bad weather and for clearing stalled and wrecked vehicles.

Local law enforcement and locally assigned State Patrol officers are able to maintain traffic and access control during the initial periods of the emergency. The National Guard was requested to provide additional personnel and equipment to support continuing operations.

Personnel in the EOC had lists of mobility impaired persons and others in need of transportation. The lists included the special needs or requirements of the mobility impaired. Wheelchair lift vans and buses were available to provide transportation for these people.

The procedure for the evacuation of schools was demonstrated in the EOC. Communication between a Geauga County Transit bus driver and his dispatcher was demonstrated. The Transportation Officer and his supporting staff had available lists of resources necessary to accomplish this task.

8. Radiological Exposure Control

The Radiological Officer in the EOC had high range dosimeters and TLDs available for issue to emergency workers . He had the necessary chargers, record keeping cards and instructions for the use of dosimeters. Low and Mid-range dosimeters were not available. The Deputy Sheriff and Highway Patrol Officer were instructed to report the dosimetry readings to the EOC. They were further notified of their maximum permissible dose and what action to take should it be attained

Deficiency: K.3.a. Low and mid range dosimeters were not available for emergency workers in the field.

Recommendations: Low and mid range dosimeters should be provided to all emergency workers.

9. Media Relations

Geauga County dispatched a Public Information Officer to the Joint Public Information Center (JPIC) who coordinated news releases. PIO's from the State and three Counties conferred on all information received. They coordinated the content of the press releases by telephone with their respective EOC's.

Protective action recommendations, as discussed in the JPIC, were not presented in terms of familiar boundaries or landmarks. The EBS messages released from the Lake County EOC did include this information. However, the EBS messages were not distributed to the media at the JPIC.

Deficiency: E.7. Information contained in the EBS messages was not released at the JPIC, e.g. presentation of protective action recommendations in terms of familiar landmarks or boundaries.

Recommendation: All messages released through the EBS should be provided to the JPIC for distribution to the media.

10. Recovery and Reentry

Recovery and Reentry was not an objective of this exercise and was not demonstrated.

11. Scenario (as it relates to the EOC)

The scenario initiated and sustained an adequate amount of activity for the Geauga County EOC to demonstrate their emergency response functions. It was noted that "free play" problems were introduced to various EOC staff members to stimulate additional problems that the staff may encounter during a real incident.

b. Field Activity (Access Control)

1. Traffic and Access Control

The EOC operated well. Information on the road system and available resources were updated routinely. The Operations Room (event) status board was used for updates on the status of the road system and to report when resources in the field were available on station.

Field units were positioned in the area before needed so that they could generally respond to traffic control or access control. The field units arrived at the traffic control point within 15 minutes of the declaration of "GENERAL EMERGENCY."

While the EOC was aware of the protective action being taken by the other counties, they were not aware of the perimeter control points in other counties and were not aware of which sites the other counties were blocking at any particular time.

Recommendation: All the Counties should coordinate their access control points and maintain their EOC map with the other Counties' information.

2. Special Evacuation Problems

The EOC staff showed an ability to consider the effects on the evacuation routes of congestion or impediments. The Transportation Officer had a list of all available County manpower and equipment. It included a private contractor that maintained the roads of one of the townships. It did not include the three tow truck operators that the Deputy Sheriff stated were used in the area of Thompson Township.

Recommendation: If private tow trucks are to be utilized for emergency response, they should be incorporated into the County's emergency response plan.

3. Route Alerting

Route alerting was not an objective of this exercise.

4. Worker Exposure Control

The exercise controller stated that the Ohio Department of Transportation (ODOT) crew would not be going into the EPZ and therefore would not be issued dosimetery equipment. It would, however be availabe at the fire department if they needed it. The ODOT crew that showed up and the County Superintendent that sent them did not know where to get-the dosimetry equipment or what to do with it if they had it.

Deficiency: K.3.a. and K.3.b. The ODOT crew assigned to the access control point did not have the proper dosimetry equipment, did not know how to obtain it and [illegible]ld not know how to utilize it. There was no [illegible]osure control for these emergency workers.

Recommendation: All emergency workers in the field should be issued the appropriate dosimetry and be trained in its use. Proper exposure control should be maintained for these workers.

5. Scenario (as it relates to access control)

The scenario provided adequate opportunity for the County to demonstrate their access control responsibilities in both the EOC and the field.

c. Relocation Centers

1. Activation and Staffing

Staffing included NORA Ham Radio, Red Cross Mobile Radio, American Red Cross, Burton Police Department, Burton Fire Department, County Health Department, County Human Services Department, County Health and Sanitation Department and Social Services.

A shift change was not demonstrated. However, double staffing and rosters were utilized to demonstrate an around the clock staffing capability.

2. Registration and Monitoring

The four evacuees at the Berkshire High School were registered immediately after they were monitored for contamination. This activity was accomplished in three stages: monitoring, registration by reception center personnel and registration by Red Cross personnel.

If medical attention is needed by any evacuee, they would be directed to the Health Clinic located at the reception center. Evacuees were registered twice, once by center staff and once by Red Cross staff.

Recommendation: Evacuees should only be registered once and one form be used in the registration process. The standard American Red Cross shelter registration form should be used.

Decontamination, if needed, was available at the center. Evacuees that were contaminated were instructed on where and how to use showers and decontamination area. Monitors at the center were slow and unsure of their equipment.

Recommendation: Additional training, practice for reception center staff in the use of monitoring equipment would enhance operations.

3. Congregate Care

The reception center located at the Berkshire High School can accommodate approximately 500 evacuees. Any number over this would necessitate opening of the Berkshire Elementary School which is located a short distance from the reception center. The High School can feed approximately 250 people for extended periods. Numbers over 250 people would be provided for by Red Cross canteen truck. Communications demonstrated were Nora Ham Radio, Red Cross Mobile Radio and Commercial Telephone.

4. Scenario (as it relates to the Assembly Area and Congregate Care Center)

The scenario was adequate in that it provided the County with the opportunity to demonstrate their reception and congregate care activities.

d. Decontamination

Most of the activities at the Emergency Worker Decontamination Center at the Hambden Fire Station were table top simulations rather than demonstrations. No vehicles were monitored or decontaminated. Decontamination procedures were discussed and an emergency worker was monitored and processed to demonstrate this capability. Personal dosimetry worn by the workers consisted of two CDV 742's and a TLD. They did not have low and mid range dosimeters.

III. Summary Listing of Deficiencies

Ohio
(State)

UTILITY: Perry Nuclear Power Plant
Summary Listing of Deficiencies

November 28, 1984
(Date)

A. Deficiencies Affecting Public Health and Safety

Ohio
(Community)

NUREG Item	Narrative Statement of Deficiency	Corrective Action Proposed	Scheduled Date	Actual Date
None				

Ohio
(State)

UTILITY: Perry Nuclear Power Plant
Summary Listing of Deficiencies

November 28, 1984
(Date)

B. Other Deficiencies

Ohio
(Community)

NUREG Item	Narrative Statement of Deficiency	Corrective Action Proposed	Scheduled Date	Actual Date
A.4.	Around the clock staffing capability at the EOF was not demonstrated as outlined in the State of Ohio plan.			
E.7.	Information contained in the EBS messages was not released at the JPIC.			
F.1.b.	The five-way telephone link proved unreliable during the exercise.			
I.8.	The OEPA member of the field monitoring team was not familiar with his sampling procedures.			

Ohio
(State)

Ohio
(Community)

UTILITY: Perry Nuclear Power Plant
Summary Listing of Deficiencies

November 28, 1984.
(Date)

C. Recommendations

1. The status board in the EOC could be used to indicate and monitor County EOC and field activities as well.

2. One map, similar to the Lake County map, including all three Counties and all the monitoring points should be given to the field monitoring teams.

3. The ODOH Sampling Kit should be equipped with gloves which should be used and the procedures should address radioactivity cross contamination.

4. Field monitoring team data should be recorded on the specially designed chart available in the dose assessment room.

5. The radiological laboratory should consider procurement of commercially available calibration standards for gamma isotopic analysis, installation of HEPA filters on the hood for radioiodine analysis, procurement of a back-up multi-channel analyzer, procurement of instrumentation to survey incoming samples, and a computer link for data transmission.

Ohio
(State)

UTILITY: Perry Nuclear Power Plant
Summary Listing of Deficiencies

November 28, 1984
(Date)

A. Deficiencies Affecting Public Health and Safety

Lake County
(Community)

NUREG Item	Narrative Statement of Deficiency	Corrective Action Proposed	Scheduled Date	Actual Date
None				

Ohio
(State)

Lake County
(Community)

UTILITY: Perry Nuclear Power Plant
Summary Listing of Deficiencies

B. Other Deficiencies

November 28, 1984
(Date)

NUREG Item	Narrative Statement of Deficiency	Corrective Action Proposed	Scheduled Date	Actual Date
E.7.	Information contained in the EBS messages was not released at the JPIC.			
F.1.b.	The five-way telephone link proved unreliable during the exercise.			
J.10.j.	Lake County was using a perimeter control map different from that shown in its 10/8/84 version of the plan.			
J.12.	The Reception Center Manager did not have sufficient working knowledge of the facility's plan for operation.			
K.3.a. K.3.b.	Emergency workers in the field did not have mid and low range dosimeters and record keeping cards.			
O.4.j.	Radiological release data forms were not completely filled out.			

Ohio
(State)

Lake County
(Community)

UTILITY: Perry Nuclear Power Plant
Summary Listing of Deficiencies

C. Recommendations

November 28, 1984
(Date)

1. All the Counties should coordinate their access control points and maintain their EOC map with the other Counties' information.

Ohio
(State)

UTILITY: Perry Nuclear Power Plant
Summary Listing of Deficiencies

November 28, 1984
(Date)

A. Deficiencies Affecting Public Health and Safety

Ashtabula County
(Community)

NUREG Item	Narrative Statement of Deficiency	Corrective Action Proposed	Scheduled Date	Actual Date
None				

Ohio
(State)

UTILITY: Perry Nuclear Power Plant
Summary Listing of Deficiencies

November 28, 1984
(Date)

B. Other Deficiencies

Ashtabula County
(Community)

NUREG Item	Narrative Statement of Deficiency	Corrective Action Proposed	Scheduled Date	Actual Date
E.7.	Information contained in the EBS messages ws not released at the JPIC.			
F.1.b.	The five-way telephone link proved unreliable during the exercise.			
K.3.a.	Emergency workers in the field did not have low and mid range dosimeters.			
K.3.b.	EOC staff did not have an opportunity to actively monitor emergency worker exposure.			
K.5.b.	The Saybrook Fire Station is not an adequate facility for use as a decontamination center.			
L.1.	The Hospital Emergency Room staff did not demonstrate all of the equipment necessary to handle a contaminated injured victim.			

Ohio
(State)

UTILITY: Perry Nuclear Power Plant
Summary Listing of Deficiencies

November 28, 1984
(Date)

C. Recommendations

Ashtabula County
(Community)

1. Review the EOC proceudres to determine if a new form (more pages and/or a distribution and routing section) would enhance message handling.

2. All the Counties should coordinate their access control points and maintain their EOC map with the other Counties' information.

UTILITY: Perry Nuclear Power Plant
Summary Listing of Deficiencies

Ohio
(State)

November 28, 1984
(Date)

A. Deficiencies Affecting Public Health and Safety

Geauga County
(Community)

NUREG Item	Narrative Statement of Deficiency	Corrective Action Proposed	Scheduled Date	Actual Date
None				

Ohio
(State)

Geauga County
(Community)

UTILITY: Perry Nuclear Power Plant
Summary Listing of Deficiencies

B. Other Deficiencies

November 28, 1984
(Date)

NUREG Item	Narrative Statement of Deficiency	Corrective Action Proposed	Scheduled Date	Actual Date
E.1.	The notification of "UNUSUAL EVENT" received via commercial telephone was not verified.			
E.7.	Information contained in the EBS messages was not released at the JPIC.			
F.1.b.	The five-way telephone link proved unreliable during the exercise.			
K.3.a.	Low and mid range dosimeters were not available for emergency workers in the field.			
K.3.a. K.3.b.	The ODOT crew assigned to the access control point did not have proper dosimetry equipment, did not know how to obtain it and would not know how to utilize it. There was no exposure control for these emergency workers.			

Ohio
(State)

UTILITY: Perry Nuclear Power Plant
Summary Listing of Deficiencies

November 28, 1984
(Date)

C. Recommendations

Geauga County
(Community)

1. All exercise communications should be initiated with the caveat "This is a drill".

2. All Counties should coordinate their access control points and maintain their EOC map with the other Counties' information.

3. If private tow trucks are to be utilized for emergency response, they should be incorporated into the County's emergency response plan.

4. Evacuees should only be registered once and one form be used in the registration process. The standard American Red Cross shelter registration form should be used.

5. Additional training and practice for reception center staff in the use of monitoring equipment would enhance operations.

IV. Attachment

6.3 Narrative Summary - Offsite Sequence of Events

PERRY NUCLEAR POWER PLANT
1984 EMERGENCY PREPAREDNESS EXERCISE

NARRATIVE SUMMARY - OFFSITE SCHEDULE OF EVENTS

Approximate Time	PNPP Key Events and Actions	Ohio Response	County Response
0717	PNPP Shift Supervisor calls Perry Township Fire Department to assist in fighting an in-plant fire.		Perry Township Fire Department responds to fire in accordance with standard procedures.
0725	PNPP declares an UNUSUAL EVENT due to a fire in the protected area lasting more than 10 minutes. PNPP notifies Counties' Sheriff Departments and State DSA via 5-way dedicated line.	Ohio Disaster Services Agency (ODSA) receives notification of an UNUSUAL EVENT from PNPP and from the Lake County Radiological Analyst. Message is logged.	Message is logged. Sheriff Departments notify their respective DSA Director and selected officials as per County procedures. Lake County Sheriff Department notifies the Perry Township Fire Chief.
0730		Telephone checks are made by the ODSA Response Section to determine the availability of vehicles and field monitoring equipment. The Office of the Governor is notified of the condition. The Lake County Radiological Analyst remains in contact with both the county directors and the utility to receive updates.	

PERRY NUCLEAR POWER PLANT
1984 EMERGENCY PREPAREDNESS EXERCISE

NARRATIVE SUMMARY - OFFSITE SCHEDULE OF EVENTS

Approximate Time	PNPP Key Events and Actions	Ohio Response	County Response
		The ODSA Public Information Officer (PIO) and the Communications Officer will be placed on standby.	
0805	PNPP declares an ALERT due to a spent fuel handling accident. The Technical Support Center and Operations Support Center are activated. PNPP uses 5-way line to notify County Sheriffs and State DSA of the Alert.	ODSA receives a direct notification of the Alert from Perry over the 5-way dedicated line. Message is logged. Activate State EOC in Columbus. Activate field monitoring teams, dispatch State Public Information Officer, Radiological Officer and Field Monitoring Teams to Perry.	Message is logged. Sheriff Departments notify DSA Directors and selected officials as per their procedures. County EOCs activate as per plans, and where appropriate, follow DSA Directors' orders. Sheriff Departments transfer monitoring of 5-way dedicated line to County EOCs. Counties test operability of 3-way dedicated line. Send Public Information Officer to the JPIC when JPIC is activated.

PERRY NUCLEAR POWER PLANT
1984 EMERGENCY PREPAREDNESS EXERCISE

NARRATIVE SUMMARY - OFFSITE SCHEDULE OF EVENTS

Approximate Time	PNPP Key Events and Actions	Ohio Response	County Response
			Counties notify all agencies per their procedures (police, fire, ambulance, schools, hospitals, nursing homes, prisons, major employers.)
			Lake County alerts the EBS Central Program Control Station.
			EOC staff not yet activated are notified and put on standby.
			Amateur radio operators notified and put on standby (Ashtabula and Geauga Counties).
			Radiological Officer and assistant prepare TLDs for pickup by user agencies.
			EOC security system is activated.
			Radiological Officer monitors 5-way dedicated line.
			Message log initiated.
			American Red Cross notified.
			Reception centers notified.

PERRY NUCL... POWER PLANT
1984 EMERGENCY PREPAREDNESS EXERCISE

NARRATIVE SUMMARY - OFFSITE SCHEDULE OF EVENTS

Approximate Time	PNPP Key Events and Actions	Ohio Response	County Response
			Decontamination teams notified.
0815		The nuclear response section supervisor or his assistant will promptly notify the following: a. Supervisor of the ODSA Radiological Instrumentation/ Maintenance and Calibration (RI/M&C) Facility. b. State Radiological Officer. c. Public Information Officer. d. Communications Officer. e. Ohio Department of Health. f. Ohio Environmental Protection Agency. *g. Office of the Governor. *h. The Ontario Ministry of the Solicitor General. *Calls to be made by the Deputy Director of ODSA.	

PERRY NUCLEAR POWER PLANT
1984 EMERGENCY PREPAREDNESS EXERCISE

NARRATIVE SUMMARY - OFFSITE SCHEDULE OF EVENTS

Approximate Time	PNPP Key Events and Actions	Ohio Response	County Response
		*i. Ohio National Guard (ONG), Air Support. *j. ONG Security. *Calls to be made by the Deputy Director of ODSA.	
0820		Simultaneously with notification, the following activities will begin: a. The radiological section supervisor will alert response personnel. All response equipment will be loaded into vehicles which will then leave for the staging area at the Chardon Highway Patrol Post. b. The ONG will be in the process of preparing air transportation. c. The ODSA Communications Officer will dispatch the communications van to the preselected site: Ledgemont School, 16200 Burrows Rd., Thompson, Ohio.	

PERRY NUCL . POWER PLANT
1984 EMERGENCY PREPAREDNESS EXERCISE

NARRATIVE SUMMARY - OFFSITE SCHEDULE OF EVENTS

Approximate Time	PNPP Key Events and Actions	Ohio Response	County Response
		d. The Ohio Department of Health and the Ohio Environmental Protection Agency will proceed to the state Emergency Operations Center (EOC.) e. The state PIO and one assistant will prepare to fly to the Joint Public Information Center (JPIC.) The ODSA Deputy Director will make arrangements for EOC security. The ODSA EOC Controller will verify that the EOC is equipped to function in the event of a Site Area Emergency.	
0835		The EOC Controller will dispatch operations and training personnel to the affected counties.	
0840		The state dose assessment facility will be staffed by ODSA, Ohio Dept. of Health and the Ohio Environmental Protection Agency. Open communications with the three counties and utility Technical Support Center (TSC) will be ongoing for the remainder of the exercise.	

PERRY NUCLEAR POWER PLANT
1984 EMERGENCY PREPAREDNESS EXERCISE

NARRATIVE SUMMARY - OFFSITE SCHEDULE OF EVENTS

Approximate Time	PNPP Key Events and Actions	Ohio Response	County Response
0845			Ashtabula County Medical Center receives notification of a contaminated, injured victim.
0905			A contaminated, injured victim arrives at Ashtabula County Medical Center for treatment. NOTE: The initiating event is out of sequence; it occurs at 1515.
0930	PNPP requests an ambulance to transport a contaminated, injured person to Lake County Memorial Hospital, East.		Dispatch ambulance from Perry Township Fire Department.
1015	The ambulance arrives at Lake County Memorial Hospital, East.		The victim is decontaminated and treated for his injuries.
1030	PNPP declares a SITE AREA EMERGENCY due to a complete loss of any functions needed for plant hot shutdown. The Emergency Operations Facility and Joint Public Information Center are activated.	OSDA receives notification of a Site Area Emergency over the 5-way dedicated line. ODSA assessment personnel begin notification of the following agencies with instructions to activate the EOC: a. Ohio Dept. of Natural Resources.	Counties' EOCs are fully activated. Mobilize American Red Cross. Notify hospitals, nursing homes, prisons, school districts, recreation areas, transportation systems.

PERRY NUCL...R POWER PLANT
1984 EMERGENCY PREPAREDNESS EXERCISE

NARRATIVE SUMMARY - OFFSITE SCHEDULE OF EVENTS

Approximate Time	PNPP Key Events and Actions	Ohio Response	County Response
	PNPP notifies Counties and State of escalation to SITE AREA EMERGENCY, via the 5-way dedicated line.	b. Ohio State Patrol. c. Public Utility Commission of Ohio. d. American Red Cross. e. Ohio Dept. of Agriculture. f. Ohio Dept. of Transportation. g. State of Pennsylvania. h. Ohio Public Welfare. The ODSA Deputy Director will notify: i. The Governor's Office. j. The Ohio National Guard Adjutant General and Military Support. k. Ontario Ministry of the Solicitor General.	Mobilize police, fire and ambulance. Reception centers and decontamination teams are activated or placed on standby as per plans and DSA Directors' instructions. Establish amateur radio communication links with participants. EBS Message - "Site Area Emergency; No Action Necessary" - initiated by Lake County. Radiological Officer distributes TLDs to agencies as they come to the EOC to pick them up. Response agencies distribute dosimetry to individual workers. School districts place school bus drivers on standby status.

PERRY NUCLEAR POWER PLANT
1984 EMERGENCY PREPAREDNESS EXERCISE

NARRATIVE SUMMARY - OFFSITE SCHEDULE OF EVENTS

Approximate Time	PNPP Key Events and Actions	Ohio Response	County Response
			Transportation staging areas activated. Lake County initiates EBS Message - "Shelter farm animals" - if advised by State. Notify host schools.
1040		Additional notifications will be made to the Federal Emergency Management Agency and the U.S. Dept. of Energy. This notification will include the request for assistance to include; a. field monitoring for noble gas and iodine. b. field sampling, including analysis to determine particulate and gaseous depositions. The ODSA Operations Officer will activate the state EOC in support of county agencies.	

PERRY NUC...R POWER PLANT
1984 EMERGENCY PREPAREDNESS EXERCISE

NARRATIVE SUMMARY - OFFSITE SCHEDULE OF EVENTS

Approximate Time	PNPP Key Events and Actions	Ohio Response	County Response
1045		The Director of the Ohio Disaster Services Agency will request that the Governor of Ohio declare a state of emergency and authorize active duty military support of state field monitoring teams to perform, or prepare to perform, radiation monitoring. The JPIC will be staffed by state personnel. Lines of communications will be opened to the State EOC and utility EOF for coordination of public information releases. Releases will be made as situations require. The ODSA Public Information Officer will prepare the state briefing area for press releases from the State EOC. The rumor control line at the State EOC will be manned. Briefings will be held in Room 153 of General Beightler's Armory hourly or as the situation dictates.	

PERRY NUCLEAR POWER PLANT
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NARRATIVE SUMMARY - OFFSITE SCHEDULE OF EVENTS

Approximate Time	PNPP Key Events and Actions	Ohio Response	County Response
		The Ohio Dept. of Health will make a protective action recommendation to Lake County to: "Shelter and place on stored feed, all lactating animals within two miles of the plant."	
1220	PNPP declares a GENERAL EMERGENCY due to a loss of two fission product barriers with a potential loss of the third. PNPP notifies State and Counties of escalation via the 5-way dedicated line.	ODSA receives notification of a General Emergency. Protective action recommendations received from the utility are considered by the Ohio Dept. of Health Personnel.	Initiate appropriate EBS/NOAA message and simulate siren sounding after coordination among three counties over the 3-way dedicated line. Activate Traffic Control Points and perimeter control points. Activate school bus drivers assemble buses at schools. Mobilize police, fire, ambulance, hospitals, nursing homes, prisons, schools, recreation areas, and transportation systems. Activate reception centers and transportation staging areas if not already done. Activate decontamination teams.

PERRY NUCLEAR POWER PLANT
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NARRATIVE SUMMARY - OFFSITE SCHEDULE OF EVENTS

Approximate Time	PNPP Key Events and Actions	Ohio Response	County Response
			Direct the relocation of municipal fire station and police department EOCs. County EOC ensures that local police departments continue security patrols and police/fire agencies ensure notification to 100% of population. Additional protective actions issued as warranted and agreed to via the 3-way dedicated line.
		Based on plant status, the Ohio Dept. of Health will make an assessment within 15 minutes. Protective action recommendations will be formulated and approved by the Governor's representative.	
1235		Protective action recommendations are passed to the county and State representatives at the local EOCs. The State Analyst will remain in consultation with the three County Commissioners until the final protective action recommendation is reached.	

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NARRATIVE SUMMARY - OFFSITE SCHEDULE OF EVENTS

Approximate Time	PNPP Key Events and Actions	Ohio Response	County Response
		Notification of all county decisions will be made to the State EOC and utility EOF by the State Analyst. ODSA communicators will maintain communications with counties, adjacent states, field monitoring teams, JPIC, and EOF.	
1315	A major release of radiation begins. Offsite Radiation Monitoring Teams detect radiation levels. PNPP upgrades its protective action recommendations.		
1330		ODSA receives notification of increased release rates and new protective action recommendations. The Ohio Dept. of Health will analyze the information provided and make the State recommendations.	

PERRY NUCLEAR POWER PLANT
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NARRATIVE SUMMARY - OFFSITE SCHEDULE OF EVENTS

Approximate Time	PNPP Key Events and Actions	Ohio Response	County Response
		The Ohio National Guard dispatches security personnel to Lake, Geauga, and Ashtabula Counties.	
1500	The release of radiation stops.		
1515		ODSA receives notification of the end of the release.	The counties receive notification of the end of the release. An emergency worker at the Saybrook Decontamination Center becomes injured and contaminated. He is loaded into an ambulance.
1615	Offsite levels of radiation return to background. PNPP, in consultation with the State and counties, downgrades the Emergency Classification. PNPP notifies State and counties of downgrade via the 5-way dedicated line.		Notifications are made to all response agencies - police, fire, ambulance. Notify hospitals, nursing homes, school districts, prisons, recreation areas, transportation systems.

PERRY NUCLEAR POWER PLANT
1984 EMERGENCY PREPAREDNESS EXERCISE

NARRATIVE SUMMARY - OFFSITE SCHEDULE OF EVENTS

Approximate Time	PNPP Key Events and Actions	Ohio Response	County Response
			Issue notice to public via news release at JPIC.
1620		The offsite portion of the Exercise is terminated by the ODSA Nuclear Operations Officer by announcement over the 5-way dedicated line. Field samples will be analyzed by the Ohio Dept. of Health (DOH) to determine ground level concentrations of radionuclides. (DOH analysis will be out of sequence.)	
1645	The exercise is terminated.		

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6.4 Written Summary of The Exercise Scenario

6.4 Written Summary of The Exercise Scenario

NOTE: The following is a synopsis of the detailed narrative summary listed in Section 6.2 of this package.

The Perry Nuclear Power Plant has been operating continuously for the last 17 months with a capacity factor of over 90 percent. The Plant is currently operating at 100 percent power and is at the end of core life. Some equipment problems are ongoing but all have been addressed through surveillance activities. Plans are currently underway to ship one fuel element to Idaho National Engineering Laboratories for examination and testing on the new barrier fuel cladding.

Weather conditions remain constant with the forecast indicating a high temperature of 45°F for the day with winds out of the Northwest at 10 to 20 miles per hour.

At 7:08 a.m. a fire breaks out in the PPD machine shop on Level 599'. The Control Room is notified to activite the Station Fire Brigade. Upon arrival at the scene, fire fighting operations commence and a request is made for offsite fire fighting assistance due to the severe nature of the fire.

Based on this situation, at 7:25 a.m. the Shift Supervisor declares an Unusual Event in accordance with EPI-A1, Section F. I. 1 ("Fire within the Protected Area lasting greater than 10 minutes"). Notifications are begun to offsite authorities and the Nuclear Regulatory Commission.

A short while later offsite fire support arrives at the Plant and the fire is extinguished at approximately 7:45 a.m. Initial indications are that the fire has not affected any Plant safety systems and a decision is made to leave the Plant at full power.

Plant personnel begin damage assessment activities and preliminary reports indicate that no one was injured as a result of the fire.

At 8:00 a.m. a spent fuel bundle is raised beyond the normal up limit due to a winch interlock failure on the Spent Fuel Handling Bridge in the Fuel Handling Building. This action results in the initiation of radiation alarms locally and in the Control Room.

The Fuel Handling Building is evacuated, and the Control Room is notified of the situation. Based on EPI-A1, Section J. II. 1 ("Fuel handling accident with release of radioactivity to containment or Fuel Handling Building") the Shift Supervisor escalates the emergency classification to an Alert, and notifications are made to required personnel and offsite agencies. The Technical Support Center and Operations Support Center being activation and other emergency response personnel go on standby. Local Emergency Operations Centers begin notifications and remain in a standby mode.

Plant assessment activities continue onsite with reports coming in from the work crews who are re-entering the Fuel Handling Building.

At 9:15 a.m. an operator on rounds in the Intermediate Building notices water coming from the Fuel Pool Cooling and Cleanup Backwash Receiving Tank Room. While attempting to leave the area, he slips, falls and is seriously injured. Later indications will show that he is also contaminated by the leaking water. The Plant First Aid Team responds while notifications are made offsite for ambulance support.

Lake County Memorial East Hospital is notified to prepare for receipt of a contaminated, injured man.

Plant conditions remain stable and final reports indicate no serious damage resulted from the fire. Repair activities are begun in the Spent Fuel Pool Area to return the bundle to safe storage.

At 10:00 a.m. Safety Relief Valve (SRV) B21-F051D inadvertently opens and operators prepare to commence a reactor shutdown. During the scram initiation no control rod motion is observed. All alternate attempts to shutdown fail, resulting in an ATWS (Anticipatory Transient Without Scram).

The Operations Manager in the Technical Support Center declares a Site Area Emergency based on EPI-A1, Section D.III. 2 ("Complete loss of any functions needed for plant hot shutdown"). Offsite notifications are made. The Emergency Operations Facility and Joint Public Information Center are activated. State and Local Emergency Operation Centers are also activated.

Operators' attempts to manually scram the reactor continue to fail; and the Standby Liquid Control System fails to initiate upon demand.

Due to these failures, the Control Room Operators implement Attachment 5 of PEI-1 to lower reactor water level and reduce reactor power to approximately 8% through void formation. Efforts to insert the control rods or initiate boron poisoning continue to fail.

At 12:00 p.m. the reactor's water level is being maintained by only one feed pump. A short time later the running feedwater booster pumps and the running feed pump trip due to a low hot surge tank level switch malfunction. Reactor water level control is lost and the water level decreases below the MSIV isolation setpoint resulting in uncovering of the core and fuel clad degradation.

Based on EPI-A1, Attachment 3, 1 ("Loss of 2 fission product barriers with a potential loss of third barrier") the Emergency Coordinator declares a General Emergency.

Offsite authorities are notified and public protective actions are recommended. The Emergency Broadcast system is utilized to notify the public and use of the early warning siren system is simulated.

At 1:15 p.m. increased containment pressure causes the failure of the third fission product barrier (containment) allowing a major release of radioactivity through the Annulus Exhaust Gas Treatment System to the environment.

Radiation monitoring teams follow the path of the plume, and onsite efforts continue to attempt to gain control and stabilize the plant.

At 2:00 p.m. some of the reactor control rods begin inserting and the Standby Liquid Control System completes injection. Forty-five minutes later the Control Room reports that the reactor is shutdown and all rods are inserted. Efforts continue to stabilize and improve plant conditions. With the decrease in containment pressure, the release decreases until the containment pressure returns to atmospheric pressure and the release is terminated.

Radiation monitoring teams follow the path of the plume and onsite efforts continue to stabilize and improve plant conditions.

Due to the long duration of the emergency, turnovers between key onsite response personnel will be occuring to provide a rest period for those initial responders who directed the early phases of the emergency response effort.

With all required activities successfully demonstrated onsite and offsite, the emergency is de-escalated so that recovery operations can begin.

After all required re-entry activities (plant only) are underway, the Exercise is terminated at 4:45 p.m.