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NUCLEAR REGULATORY COMMISSION

OFFICE OF SECRETARY  
DOCKETING & SERVICE  
BEFORE THE ATOMIC SAFETY AND LICENSING BOARD BRANCH

In the Matter of )  
 )  
CLEVELAND ELECTRIC ILLUMINATING )  
COMPANY, ET AL. )  
 )  
(Perry Nuclear Power Plant, )  
Units 1 and 2) )

Docket No. 50-440 OL  
50-441 OL

AFFIDAVIT OF ROBERT O. SHAPIRO  
REGARDING EMERGENCY PLAN ISSUES

I, Robert O. Shapiro, being duly sworn, state as follows:

1. I am employed by the Federal Emergency Management Agency, Region V, Battle Creek, Michigan. I am responsible for the review and assessment of the offsite 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 offsite emergency plans. Those contentions are designated A, B, C, G, H, M, O, P, Q, U, Z, PB, GG, 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.

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3. Issue 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 has alleged deficiencies in the plans in that the effects of adverse weather (i.e., a thunderstorm) on a Summer Sunday during tourist season, as well as other adverse conditions such as rain, flooding or fog, were not considered. Objections, pp. 23.
5. The emergency plans for Lake, Ashtabula and Geauga Counties provide "Population Evacuation Time Summaries" in each plan. These summaries divide the population into categories of permanent population, non-auto owning population, transient population, population in Health Institutions, and School populations. Each summary indicates the evacuation time estimates during "good conditions" and "adverse conditions." The evacuation plans address the 2 mile, 5 mile and 10 mile Emergency Planning Zones. Ashtabula County and Geauga County are revising their evacuation time estimates previously found adequate in FEMA's 1984 Interim Report. (The summaries were inadvertently omitted from recent revisions to the plans. FEMA has been notified that the counties intend to rely on the previous time summaries until the revision is complete.)
6. The Regional Assistance Committee <sup>1/</sup> (RAC) met on April 19, 1983, and concluded after review of these emergency plans, that the

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<sup>1/</sup> The Regional Assistance Committee is composed of representatives of DOT, NPC, EPA, FDA, DOC, USDA, DOE, FEMA, and HHS who review all offsite radiological emergency plans for conformance with NUREG-0654 guidance. See, 44 CFR § 350, ¶ 6(b).

"Population Evacuation Time Summaries" described above are adequate to meet the offsite planning regulations and guidance. This conclusion was based on the projections of the various categories of the population evacuating during good and adverse conditions. The Perry Interim Finding of February 6, 1984, affirms the Regional Assistance Committee's evaluation.

7. Issue B states:

Evacuation route impediments have not been identified or considered; neither has evacuation of construction workers on-site, nor has a low or now power operation at Perry during extreme conditions of inclement weather been included in the plan.

Response

8. The intervenor specifically alleged that the draft State and local plans neither identify nor propose options for dealing with potential impediments such as heavy snow fall. Objections, p. 3.
9. Route impediments, such as weather conditions, accidents, stalled vehicles, and obstructions due to fallen trees, rocks etc. can not be preidentified, yet the possibilities of these problems can be addressed in emergency response plans. The Emergency Plans for Lake, Ashtabula and Geauga Counties each indicate that they will have a Traffic Control Officer (TCO) located in their Emergency Operations Center (EOC) during emergencies. It is this Traffic Control Officer's responsibility to monitor all evacuation routes and any possible impediments experienced during the evacuation. Representatives from local police and fire departments as well as the Sheriff's Department and the Ohio Highway Patrol are also to be present in the Emergency Operations Centers and will have

personnel strategically placed throughout the evacuation routes. The evacuation process is monitored by all these organizations and if any impediments are identified, they will be removed. The three county plans address possible impediments and indicate that some may warrant diverting traffic to less congested routes and/or, removal of disabled vehicles, and other road impediments such as snow or fallen trees and even call for minor road repairs by the County Engineer. These provisions are described in the Lake County Plan Section J08, pp. 123-124, and Attachment J-5, pp. 134-134A, the Ashtabula County Plan in Section J, Appendix 27 and in the Geauga County Plan, Section J.6 and Appendix 28. Additionally, the State will provide 19 different types of vehicles to clear obstructions on evacuation routes, including more than 226 for snow removal. (Letter from Ohio Nuclear Operations Officer to R. Smith, CEI, February 5, 1985).

10. The Regional Assistance Committee (PAC), during their April 19, 1983, review of the Lake, Ashtabula and Geauga County Emergency Plans, concluded that each of the aforementioned county plans adequately addressed the identification of and means for dealing with potential impediments (i.e., seasonal impassability of roads, use of evacuation routes and contingency measures). The Perry Interim Finding, dated February 6, 1984, further substantiated the Regional Assistance Committee's conclusions.
11. Issue C states:

Emergency plans do not contain a consistently defined roll for County Commissioners during an emergency nor in their legal authority to act as required.

Response

12. The roles for County Commissioners during emergency are similarly defined in Lake, Ashtabula and Geauga County Plans where they indicate the County Commissioners will direct and control the offsite emergency response activities of county agencies with the cooperation and support of other local resources within the counties, arranged by prior agreement, as well as the assistance of the Ohio Disaster Services Agency. The County Commissioners are charged with the responsibility of directing those emergency response activities necessary to protect the citizens of the county. Authority for this responsibility during emergencies is provided by Sections 5915.10 through 5915.99 of the Ohio Revised Code which indicates that the County has the authority to coordinate the emergency response of the various political subdivisions within the county. References include the Ohio Emergency Plan, Lake County Plan, (A07, page 27, A08, Page 28, Attachments A-2, page 35, A-4, page 40, and A-6, page 45), Ashtabula County Plan, (Section B) and Geauga County Plan (Section B).
13. The Regional Assistance Committee (RAC), during their April 19, 1983, review of the three County Plans, approved each of the County Plans designating the County Commissioners responsible for the direction and control of county emergency response functions and found no inconsistencies among the counties' organizational structures and proposed actions. Further, the RAC was satisfied with the citations in the plans of various State and county codes and statutes authorizing the County Commissioners to take emergency actions. The Perry

Interim Finding, dated February 6, 1984, further substantiates the Regional Assistance Committee's conclusions.

14. Issue G states:

Emergency Plans should include the availability of Potassium Iodide (KI) for emergency workers.

Response

15. The intervenor stated in the "objections," p. 12, that "Glaringly omitted from the plans is any commitment to the use of Potassium Iodide for emergency workers and the public." However, letter Number 12, in the Ohio State Emergency Plan, Section II, is a September 2, 1980 letter from John H. Ackerman, M.D., Director of the Ohio Health Department to Major General James C. Clem, Ohio Adjutant General. The following partial quotation from this letter best describes the State position regarding use of Potassium Iodide: "After consultation with numerous experts, I have decided that the Ohio Department of Health will not provide Potassium Iodide (KI) for emergency workers or residents at this time." Dr. Ackerman further states in his letter that "Due to the lack of nationally recognized guidance and after consideration of the many adverse factors at risk, it is my professional opinion that it would not be in the overall best interest of the citizens of Ohio to provide Potassium Iodide at this time."
16. The revised Ohio Emergency Plan dated June 21, 1984, was submitted to FEMA Region V for review in accordance to 44 CFR, Part 350. This revised State Plan contains the September 2, 1980 letter, just described, and indicates that Ohio has not reversed its



decision against using Potassium Iodide. The Lake County Plan (K03, page 141-A and Attachment K-6, Page 147-A), the Ashtabula County Plan, (J.5, Page J-6 and Appendix 31 - "Letter Number 14"), and the Geauga County Plan (J-8, Page J-6 and Appendix 33, "Letter Number 14," Page 33-2) all adopt the State decision not to use Potassium Iodide.

17. NUREG-0645, FEMA-REP-1, Rev. 1, recommends, but does not mandate the use of Potassium Iodide for emergency workers and institutionalized persons. However, the December 6, 1982 Federal Emergency Management Agency's "Interim Policy Guidance on Potassium Iodide" states: "Each State has a responsibility for formulating guidance to define if and when potassium iodide is used as a thyroid blocking agent for emergency workers, institutionalized persons, and the general public." The November 20, 1984 Regional Assistance Committee (RAC) review of the Lake, Ashtabula and Geauga County Plans, and the October 30, 1984 review of the Ohio Emergency Plan indicated that officials should review information on Potassium Iodide by the U.S. Food and Drug Administration, although it was not the intent of the RAC to influence the State decision on its use but rather, to direct the States' attention to the Federal guidance discussed below.
18. The Federal Guidance referenced by the RAC, was published by the U.S. Food and Drug Administration in the June 29, 1982 Federal Register, Volume 47, Number 125 and stated:

The use of Potassium Iodide in the radiation emergency is not a panacea. It does not reduce the uptake by the body of other radioactive materials or provide protection against external radiation. The cost and effectiveness of other protective measures such as seeking shelter,

evacuation or respiratory protection also need to be considered.

\* \* \*

Uncertainties still exist about the dose-response for radioiodine-induced thyroid cancers and the incidence and severity of such effects from Potassium Iodide. These uncertainties, which are discussed in the final recommendations, are unlikely to be resolved soon.

19. The February 1984 FEMA Interim Report found no deficiency in the offsite emergency plans regarding decisions for use of radioprotective drugs since FEMA views this as a State prerogative.

20. Issue H states:

Inconsistent provisions in local emergency plans concerning radiation exposure levels for emergency workers and the non-availability of respirators evidences an inability to provide protection to such workers in the event of major radiation leakage.

#### Response

21. John H. Ackerman, M.D., Director of the Ohio Department of Health, entered a radiation emergency order in the Director's Journal Entry in 1979. This document, which is included in Ohio's Emergency Plan as letter number 4, establishes the exposure limits for emergency workers which conforms to FPA guidelines. Dr. Ackerman indicates in this order that "No emergency worker shall be assigned to an activity involving potential exposure to airborne radioactive particulates, or radioactivity deposited on exposed surfaces unless (1) the worker has been provided with suitable respiratory protection equipment . . ." The Lake County plan (Attachment K-3), the Ashtabula County Plan (Appendix 32) and the Geauga County Plan (Appendix 34, p. 34-1) basically adopt Dr. Ackerman's November 5,



1979 exposure limitations described above to include respiratory protection.

22. NUREG-0654/FEMA-REP-1, Rev. 1, does not require respiratory protection for offsite emergency workers yet FEMA Region V accepts the State and County's position on limits and protections for offsite emergency workers' exposure. The Regional Assistance Committee (RAC) and the Perry Interim Report of February 6, 1984, found no deficiencies in the emergency plans for the State and three Counties to limit exposures or to provide protection for emergency workers.
23. Issue M states:

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

Response

24. The Ohio Emergency Plan (reference Section II - Part I) provides that the State will assure that radiological data will be collected by the State Accident Assessment teams during an emergency situation at nuclear power plants affecting Ohio. This assessment will be accomplished independently from the utility. The State Plan describes comprehensive equipment systems and methods to be used for this purpose. The technical information is to be provided, as it is gathered and analyzed to County decision makers in terms which they can understand and base their protective decisions on. The State of Ohio has demonstrated their abilities to perform accident assessment during exercises at Zimmer, Davis-Besse, Beaver Valley and Perry.

25. The Lake, Ashtabula and Geauga County Emergency Plans indicate that they will rely on the State of Ohio to provide accident assessment. (Lake County Emergency Plan, Part I, I-01, Page 112; Ashtabula County Emergency Plan, Section I, I.1 and the Geauga County Emergency Plan, Section I, I.1, Page I-1). An effective accident assessment program requires the use of costly specialized equipment and highly trained technicians to manage it. Such an accident assessment program is beyond the financial capabilities of most counties to establish and maintain. Therefore, it is generally in the best interest of the counties to rely on the State to provide this function. The Lake County plan does not indicate any intent to provide a county monitoring system.
26. The RAC review and the FEMA 1984 Interim Report found the offsite monitoring system for the Perry plant sufficient to provide adequate data for emergency response.
27. Issue 0 states:

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

Response

28. The Lake County Emergency Plan (Part M), the Geauga County Emergency Plan (Part M) and Ashtabula County Emergency Plan (Part M) each describes reentry and recovery procedures. The County plans indicate that they will rely on the State (Ohio Emergency Plan Section II, Part M, Recovery and Reentry) to ascertain when radiation levels in the affected area are safe enough to allow implementation of recovery

and reentry procedures. The County plans address a selection of actions that may have to be taken during the reentry/recovery phase e.g., radiological assessment of food and water, and security control throughout the phase-out period.

29. The Regional Assistance Committee (RAC), during its October 30, 1984, review of the Ohio Emergency Plan and its April 19, 1983 review of the Lake, Ashtabula and Geauga Counties plans judged all of these plans adequate with regard to the reentry and recovery planning criteria. The Perry Interim Report of February 6, 1984, further substantiates the Regional Assistance Committee determination of adequacy.
30. However, the Regional Assistance Committee (PAC) met again on December 30, 1984, to review the Ohio Emergency Plan, and found the recovery/reentry procedures described by NUREG-0654/FEMA-REP-1, Rev. 1 criteria M3 and M4 inadequately addressed by Ohio, in two respects. Although the Ohio plan adequately describes the composition and basic functions of the Recovery and Reentry Committee, PAC found a deficiency in the means for informing the members that a recovery operation is to be initiated and in the method described for updating the total population dose estimates during recovery. Upon revision of the plan by the State to correct these deficiencies, the recovery, reentry plans will conform to all the criteria in NUREG-0654/FEMA-REP-1, Rev. 1. Nevertheless, as stated in FEMA's February 1984 Interim Report, and the October 1984 PAC review, the overall plans are adequate to provide appropriate recovery measures and reentry protections.

31. Issue P states:

Emergency plans are deficient with respect to hospital designations and medical services as well as procedures required to assist contaminated individuals.

Response

32. The Ohio Emergency Plan (Figure II-L-2) provides a "Ohio Directory of Medical Facilities" having emergency room capability. This listing also indicates whether the medical facility has a burn care unit and a diagnostic and/or therapeutic radioisotope facility available. The list identifies some 49 medical facilities within the Perry planning area, 39 of which have diagnostic and/or therapeutic radioisotope capabilities. The State plan (Section II, ¶ L.5.b.(1)) further designates the Cincinnati General Hospital and the Monsanto Laboratory as the specialized facilities located in Ohio that have the capability of whole body counting. The State plan (Part L, 6.a. and b.) indicates that victims of radiological accidents will be transported to medical facilities by the most accessible local means as pre-determined in the Lake, Ashtabula and Geauga Counties' Emergency plans. If transportation assistance becomes necessary within the Perry Emergency Planning Zone (EPZ) the State Emergency Plan (Figure II-J-L) indicates that upon request, the Ohio National Guard (ONG) will be prepared to furnish up to sixty-five (65) ambulances for the transportation of contaminated individuals to appropriate medical facilities. The Lake County Plan designates two county hospitals as capable of assessment and treatment of radiation injuries. (Section L-03).

Ashtabula and Geauga counties each indicate one such hospital.

(Section L in both plans.)

33. The FEMA Interim Report found the designation of medical facilities and services available within the State and local area to be sufficient for effective treatment of potential radiation and other injuries in an emergency response.

34. Contention C.

There are an inadequate number of buses to transport school children during an emergency and evacuation procedures have not considered transportation obstacles which might originate with parents picking up their children at school.

Response

35. The county emergency plans state that school districts outside the designated evacuation areas discharge their students, transport them home and stand by to support the evacuation of persons from within the evacuation areas. This planning action is intended to provide the additional buses necessary to support the evacuation of the carless, including school children. Therefore, the evacuating schools will have more buses available than those normally used to transport the school population.
36. School districts within the designated evacuation areas are to transport their students by school bus directly from schools to designated reception centers outside the 10 mile EPZ. Generally an entire school is transported to the same reception center. School children are not released to go home prior to evacuation and will remain in supervised controlled groups until the parents pick them up from the recreation centers. Lake County Plan, Sec. J06;

Ashtabula Plan, Sec. J.4.1; Geauga Plan, Sec. J-4. In the event some parents do arrive at school prior to evacuation, it is my opinion that normal school traffic control in addition to the extensive traffic control provided by the counties for emergency evacuation, will preclude disruption of school evacuation. The 1984 FEMA Interim Report found the school evacuations plans adequate to provide appropriate protection for school children.

37. Contention U.

Reception centers do not have the means or facilities for handling contaminated property.

Response

38. The State Plan (Section II-K-36) indicates the means for decontaminating personnel, clothing, supplies, instruments, and other equipment will be provided by the Ohio Disaster Services Agency Decontamination Standard Operating Procedures. The county plans (Section 11) all indicate provision of monitoring equipment at reception centers to identify contaminated property. The State plan [Section II-K-3c(3)] also indicates the Ohio Environmental Protection Agency will provide means for the disposal of radioactive wastes with a reading of above .75 mR/hr, and the Ohio Disaster Services Agency will monitor contaminated sites to determine when readings are below .75 mR/hr.

39. The FEMA 1984 Interim Report found the procedures adequate to handle contaminated property.

40. Contention Z.

The plans do not provide decontamination protection for bus drivers during emergencies.



Response

41. The Ohio Department of Health has established radiation exposure limits for emergency workers, including bus drivers. These drivers will be provided with dosimeters, which are reliable radiation detection devices. Also, as I indicated in ¶ 21, the State plans provide respirators to all emergency workers. Should the bus driver(s) need decontamination, the State plan (Section II-K-3b) provides the means for decontaminating personnel, clothing, supplies, instruments, and other equipment in the Ohio Disaster Services Agency Decontamination Standard Operating Procedures.
42. Contention BB.

Offsite emergency plans are inadequate due to the planning deficiencies set fourth in the Federal Emergency Management Agency Interim Report of March 1, 1984.

Response

43. The February 6, 1984 transmittal letter of the Perry Interim Report to FEMA National considered the Regional Assistance Committee review of the Lake, Ashtabula and Geauga County plans and stated:
- Given the above, FEMA, Region V concluded that the remaining deficiencies, considered as whole, are such that, in spite of them, there is reasonable assurance that appropriate protection measures can be taken in the event of a radiological emergency at the Perry Nuclear Power Plant. This conclusion is based solely on the basis of a plan review. Further evaluation of State and local governments ability to implement these plans will be made as a result of the November 28, 1984 full participation exercise.
44. Following the submission of this interim report to FEMA National the Perry full participation exercise was conducted as scheduled. The results of this exercise as recorded in the (draft) exercise

report (attached) for this exercise indicated no category A deficiencies ("Deficiencies Affecting Public Health and Safety") for any of the State or county response organizations.

45. Contention GG.

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

Response

46. The County and State emergency plans indicate that there are sirens and loud speakers covering the 10 mile Emergency Planning Zone for Public Alert and Notification of an emergency condition at the Perry Nuclear Power Plant. The draft (12/7/83) "Emergency Information Handbook" submitted by Cleveland Electric Illuminating Co. provides a "Special Needs Information Sheet" that is to be mailed to the County Disaster Services Agency requesting special notification and/or transportation. These means of notification are adequate to reach persons without radios or television.

47. Contention JJ.

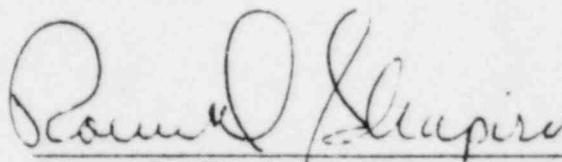
Emergency plans do not provide for back-up power so that evacuation procedures and activities can be carried out.

48. The intervenor questioned the availability of power for emergency facilities in case of loss of power from the Perry plant. Objections, 12-27. However, backup power is provided for emergency facilities. The FEMA Region V reports of the November 28 emergency plan exercise for the Perry plant state that Ashtabula, Lake, and Geauga Counties' Emergency Operations Centers have backup power sources. The Ohio radiological monitoring equipment is battery

operated. The communication system for emergency workers is self-contained. Reception centers are located outside the plume exposure EPZ, and, in case of power failure affecting any of these centers, alternate or support facilities can be provided. Traffic control and evacuation procedures do not require electricity since local and county police will be stationed along evacuation routes. The public notification sirens have an alternate power source.

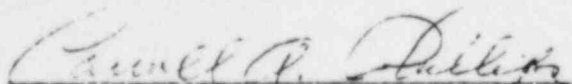
49. In conclusion, based on my review and assessment of the offsite emergency plans for the Perry plant and my observations of the November 1984 exercise of those plans, it is my opinion that the issues raised by the intervenor discussed above are sufficiently addressed by the offsite plans. It is also my opinion that the offsite emergency plans are adequate to provide appropriate actions for protection of the public and emergency workers in the event of a radiological emergency at the Perry plant.

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



Robert O. Shapiro

Subscribed and sworn to before me  
this 12<sup>th</sup> of FEB., 1985.



Notary Public

CARROLL A. PHILLIPS

Notary Public, Calhoun County, Mich.

My Commission Expires Dec. 28, 1987

My Commission expires: \_\_\_\_\_

ROBERT O. SHAPIRO  
FEDERAL EMERGENCY MANAGEMENT AGENCY, REGION V  
STATEMENT OF PROFESSIONAL QUALIFICATIONS

I am employed as an Emergency Management Specialist in the Technological Hazards Branch, Natural and Technological Hazards Division of the Federal Emergency Management Agency (FEMA), Region V. I have been in this position since 1981. I have responsibility for the review and evaluation of State and county radiological emergency plans. I have been the FEMA Team Leader for Ohio, Indiana and Michigan radiological emergency planning. I have reviewed many State and county plans and represented FEMA during Region Assistance Committee reviews. I have been either Exercise Director, Team Leader, or evaluator of more than 35 off-site nuclear power plant exercises. I have developed six Regional Director's Evaluations for six different nuclear power plants of which five have received approval. I have received a Special Achievement Award and a Certificate of Outstanding Performance.

I am also the FEMA Region V Hazardous Materials Officer. The responsibilities for this program are to review, evaluate and provide guidance for Hazardous Material incident/accident planning.

From January 1981 to September 1981 I was an Emergency Management Specialist with FEMA Region VI Plans and Preparedness Division. In this function I was responsible for the overall planning efforts of the State and local government for nuclear power plant accidents.

From May 1980 to January 1981 I was a Emergency Management Specialist with FEMA Region V Plans and Preparedness Division. I was responsible for the Maintenance and Improvement Grant Contract (Title 11

Program) of four states in Region V. I was the principle plan developer of the FEMA Region V Regional Operations Plan, which is the basic plan used by FEMA for emergency response during peace or war contingencies. I was the Mobilization-Designees-Armed Forces Reserves (MORDES) program manager for FEMA Region V and in this function was responsible for the assignment and training of reserve officers and unlisted performance, reserve duty at the Region.

From March 1978 to May 1980 I was employed by United Steel and Wire Company as a Quality Control Supervisor.

From August 1977 to December 1977 I was Assistant Manager at a Ponderosa Steak House.

From October 1976 to August 1977 I was employed by the State of Michigan as a production supervisor.

From September 1965 until May 1976 I was an officer on active duty with the United States Air Force. I was responsible for every phase of services activity in support of military operations.

I attended Shippensburg State College, Otterbein College and received a Bachelor of Science Degree from the latter in 1965. I have completed 8 hours towards a Masters Degree in Guidance and Counseling (Ball State University) and many professional management courses and Disaster Preparedness courses while working for the Federal Government.

I am a Major in the United States Air Force Ready Reserve. I am assigned to HQ AFRES, 10th AF as Disaster Preparedness Officer assigned to Wurtsmith AFB, Michigan. I develop and coordinate disaster preparedness response plans associated with military response to peace and war time contingencies. I provide guidance and training to the



Disaster Preparedness Division Personnel. My responsibilities and training are directed towards response to all disaster situations (war related, natural disaster, civil disturbances, terrorist threats, nuclear and conventional weapons accidents, etc.).