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July 27, 1983  
EF2 - 63,971

Director of Nuclear Reactor Regulation  
Attention: Mr. B. J. Youngblood, Chief  
Licensing Branch No. 1  
Division of Licensing  
U. S. Nuclear Regulatory Commission  
Washington, D. C. 20555

Dear Mr. Youngblood:

- Reference: (1) Enrico Fermi Atomic Power Plant, Unit 2  
NRC Docket No. 50-341
- (2) NRC Letter to Detroit Edison, "Emergency  
Preparedness Plans for the Fermi-2 Facility,"  
July 22, 1983

Subject: Emergency Preparedness Plans for the Fermi-2 Facility

The reference (2) letter determined the need for certain additional items of information concerning the emergency preparedness plans for Fermi-2. Each of the items enumerated in the letter is discussed below.

1. Emergency Action Levels (EALs) - The NRC comments concerning EALs have been resolved and will be incorporated in Revision 2 to the Emergency Plan. As previously agreed, this revision will be available one month prior to the NRC appraisal of Edison emergency preparedness presently scheduled for October.
2. Interaction with state and local officials - We are continuing to work with state and local government concerning the timeliness of notification of the public and training for local emergency response personnel.
3. Warning System - A description of the prompt notification system will be included in Revision 2 to the Emergency Plan. The system is presently being installed and will be fully functional prior to fuel load.

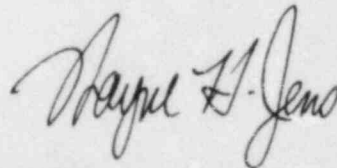
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4. As summarized by the Atomic Safety and Licensing Appeal Board, the County asserts that it (1) lacks the bus capacity to evacuate people who are without transportation, (2) doubts the willingness and training of volunteer emergency workers to carry out all of their assigned tasks, (3) lacks sufficient funds or expertise to undertake recovery and reentry operations, (4) questions whether an evacuation can be successfully accomplished, given the length of time needed to mobilize command officials, the inadequacy of existing roads and the frequent impassability of the roads in winter, (5) lacks sufficient personnel to staff decontamination/reception centers, (6) questions whether potassium iodide supplies can be made available quickly, (7) believes the monitoring systems now in place to detect radiological releases are inadequate and (8) doubts that the method chosen for decontamination of cars and trucks is adequate.

Each item above is addressed by Detroit Edison in the attached enclosure. The information presented concerning bus availability, bus capacity, population without automobile transportation, and County Agency staffing is current as of the end of 1981. All population data used for evacuation times is based on the 1980 census and is taken from "Estimate of Evacuation Times", Enrico Fermi Atomic Power Plant, Unit 2, PRC Voorhees, Revised March 1982.

Should you have any questions, please contact Mr. Larry E. Schuerman, (313) 586-4207.

Sincerely,



cc: Mr. P. Byron  
Mr. M. D. Lynch

DETROIT EDISON'S  
RESPONSES  
TO  
MONROE COUNTY  
ASSERTIONS

JULY 1983

ASSERTION 1

THE COUNTY LACKS THE BUS CAPACITY TO EVACUATE PEOPLE WHO ARE WITHOUT TRANSPORTATION.

RESPONSE

o OVERALL BUS CAPACITY IS ADEQUATE

There is adequate bus transportation for the evacuation of all population without automobile transportation within the Monroe County 10-mile Emergency Planning Zone (EPZ).

- The available bus fleet, consisting of school and public transit buses, in the County provides 21,800 seats of capacity.
- An evacuation in Monroe County within a 10-mile radius of Fermi 2 consisting of the maximum population area (MPA) as shown on Figure 1, would require the transport of approximately 16,930 persons without automobile transportation.
- Available bus capacity, therefore, is adequate to transport the population of the 10-mile MPA with less than two runs per bus.

o EVACUATION TIMES ARE ACCEPTABLE

In an evacuation of the 10-mile MPA, the available bus fleet is adequate to evacuate all school population within 2 hours 55 minutes after the start of notification and all non-school population within 3 hours 55 minutes after the start of notification.



o NUMBER OF BUS RUNS REQUIRED IS REASONABLE

In an evacuation of the 10-mile MPA, the entire population without automobile transportation can be evacuated with the available bus capacity with an average of 0.77 runs for each available bus.

o TOLERANCE FOR CONTINGENCIES IS HIGH

The population without automobile transportation within Monroe County can be effectively evacuated even when a significant fraction of the available bus fleet is not mobilized.

If only 60 percent of the available bus fleet were mobilized, the population could be evacuated with less than two runs per bus, with resulting evacuation times of 2 hours 55 minutes for school population and 3 hours 25 minutes for other population.

## 1.1 OVERALL BUS CAPACITY IS ADEQUATE

### A. Available Bus Capacity

In an evacuation of any portion of the Monroe County EPZ, the bus resources of all school district and public bus systems within the County will be used. These resources are listed in Table 1.1.1.

TABLE 1.1.1 BUSES AVAILABLE FOR EVACUATION OF THE MONROE COUNTY EPZ.

Source of Buses	Number of Buses	Available Seat Capacity
School Buses from districts within the EPZ	144	8,100
School Buses from districts in Monroe County, but outside the EPZ*	191	12,500
Public transit buses	25	1,200
Total available bus capacity	360	21,800

\*Attorney General Opinion No. 5741 states that, under P.A. 390, the Governor may direct that public school buses be used to evacuate or transport any person from a stricken or threatened area. The Governor may direct that any political subdivision's resources be utilized if they are reasonably necessary to cope with the disaster.

B. Population Without Automobile Transportation

Table 1.1.2 shows the components of the Monroe County EPZ population that would not have automobile transportation available in an evacuation and would therefore require bus transportation.

TABLE 1.1.2 POPULATION WITHOUT AUTOMOBILE TRANSPORTATION

Population Component	Evacuation Area			Monroe County EPZ
	Maximum Population Area			
	0-2	0-5	0-10	
	Mile Radius	Mile Radius	Mile Radius	
School Students	0	2,800	13,800	19,800
Population in institutions	0	80	520	900
Residents of non-auto-owning households	110	320	2,090	3,600
Residents of auto-owning households where family automobile(s) are not available for evacuation	<u>30</u>	<u>80</u>	<u>520</u>	<u>900</u>
Total population without automobiles	140	3,280	16,930	25,200

C. Bus Coverage Of People Without Automobile Transportation

Table 1.1.3 summarizes the coverage, by available buses, of the population without an automobile. Evacuation areas ranging from a 2-mile radius of the Monroe County MPA to the Monroe County EPZ are considered.

TABLE 1.1.3 SUMMARY OF BUS COVERAGE

	Evacuation Area			Monroe County EPZ
	Maximum Population Area			
	0-2	0-5	0-10	
	Mile Radius	Mile Radius	Mile Radius	
Total bus seats available	21,800	21,800	21,800	21,800
Population without auto- mobile transportation	140	3,280	16,930	25,200
Percent of evacuees transported in single bus run	>1000	660	129	86
Bus runs required to transport all evacuees	<0.1	0.2	0.8	1.2

In an evacuation of the 10-mile MPA, available bus capacity is 129 percent of the requirements. This indicates that all population without automobiles could be evacuated in a single run of the available bus fleet.

In an evacuation of the 5-mile MPA, available bus capacity is 660 percent of the requirements for the evacuation of all population without automobiles. Only 20 percent of the available buses would need to be mobilized to evacuate the entire population without automobile transportation in a single bus run.

## 1.2 EVACUATION TIMES ARE ADEQUATE

Table 1.2.1 summarizes the evacuation times for the population without automobiles. Evacuation areas ranging from the 2-mile MPA to the entire Monroe County EPZ are considered.

TABLE 1.2.1 TIME REQUIRED FOR EVACUATION OF POPULATION  
WITHOUT AUTOMOBILE TRANSPORTATION  
(Hours: Minutes)

Population Component	Evacuation Area			Monroe County EPZ
	Maximum Population Area			
	0-2	0-5	0-10	
	Mile Radius	Mile Radius	Mile Radius	
School students	1:30	1:30	2:55	2:55
Population in institutions(I)	2:20	2:20	3:25	3:25
Residents of non-auto-owning households (N)	2:20	2:20	3:25	3:25
Residents of auto-owning households where automobile(s) are not available for evacuation (A)	2:20	2:20	3:25	3:25

Under the more extensive evacuation scenarios, the 10-mile MPA or the Monroe County EPZ, the maximum evacuation times are 2 hours 55 minutes for the school population and 3 hours 25 minutes for the non-school population, consisting of population in institutions, residents of non-auto-owning households, and residents of auto-owning households where the automobile is not available for evacuation.

In less extensive evacuations, evacuation times are less than for evacuation of the 10-mile MPA or the Monroe County EPZ. In an evacuation of the 2-mile or 5-mile MPA, evacuation times are 2 hours 55 minutes for school population and 3 hours 25 minutes for non-school population.



### 1.3 NUMBER OF BUS RUNS REQUIRED IS REASONABLE

Table 1.3.1 summarizes the average number of runs per bus required for the evacuation of population without automobiles. Evacuations ranging from the 2-mile MPA to the Monroe County EPZ are considered.

TABLE 1.3.1 BUS RUNS REQUIRED FOR EVACUATION OF  
POPULATION WITHOUT AUTOMOBILE TRANSPORTATION

	Evacuation Area			
	Maximum Population Area			Monroe County EPZ
	0-2 Mile Radius	0-5 Mile Radius	0-10 Mile Radius	
Average runs per bus, school population	0	0.13	0.63	0.91
Average runs per bus, other (I, N, A) population	0.01	0.02	0.14	0.25
Average runs per bus, All population	0.01	0.15	0.77	1.16
Maximum runs, any bus	1	2	3	3

In an evacuation of the 10-mile MPA, an average of 0.77 runs per bus is required for the evacuation of all population without automobiles. Therefore, the entire population without automobiles could be evacuated in a single run of all buses. In an actual evacuation, however, practical dispatching considerations dictate that some buses may make up to three runs.

In an evacuation of the 5-mile MPA, an average of only 0.15 runs per bus is required for the evacuation of all population without automobiles. In such an evacuation, no more than two runs would be required by any single bus.



#### 1.4 TOLERANCE FOR CONTINGENCIES IS HIGH

Table 1.4.1 summarizes evacuation times and bus runs for an evacuation of the 10-mile MPA. Three alternate bus mobilization schemes are examined: 100 percent, 80 percent, and 60 percent.

TABLE 1.4.1 EVACUATION TIMES AND BUS RUNS UNDER VARIOUS LEVELS OF BUS MOBILIZATION

	Percent of Available Buses Mobilized		
	100	80	60
Bus seats available	21,800	17,400	13,100
Evacuation times, 10-mile MPA			
School population	2:55	2:55	2:55
Other (I,N,A)	3:25	3:25	3:25
Average runs per bus	0.63	0.79	1.05
School population	0.63	0.79	1.05
Other (I,N,A)	0.14	0.18	0.24
Maximum number of run by any bus	3	3	3

Table 1.4.1 indicates that evacuation of population without automobiles is not adversely affected by failure to mobilize the entire bus fleet. If only 60 percent of the available bus fleet is mobilized, the population of the 10-mile MPA can be evacuated in 2 hours 55 minutes (school population) and 3 hours 25 minutes (non-school population). These times are identical to those estimated with 100 percent mobilization of the bus fleet and reflect that, even with only 60 percent bus mobilization, evacuation can be accomplished with no more than three runs for any given bus.

Coverage of bus requirements by mobilized buses remains adequate, even with partial mobilization of buses. With 60 percent mobilization of the available buses, there are 13,100 available bus-seats of capacity. Bus requirements for the evacuation of the 10-mile MPA are 16,930 seats; consequently, at 60 percent fleet mobilization, the entire population without automobile transportation can be transported in an average of 1.29 runs by the available fleet.

MAXIMUM  
POPULATION  
AREA

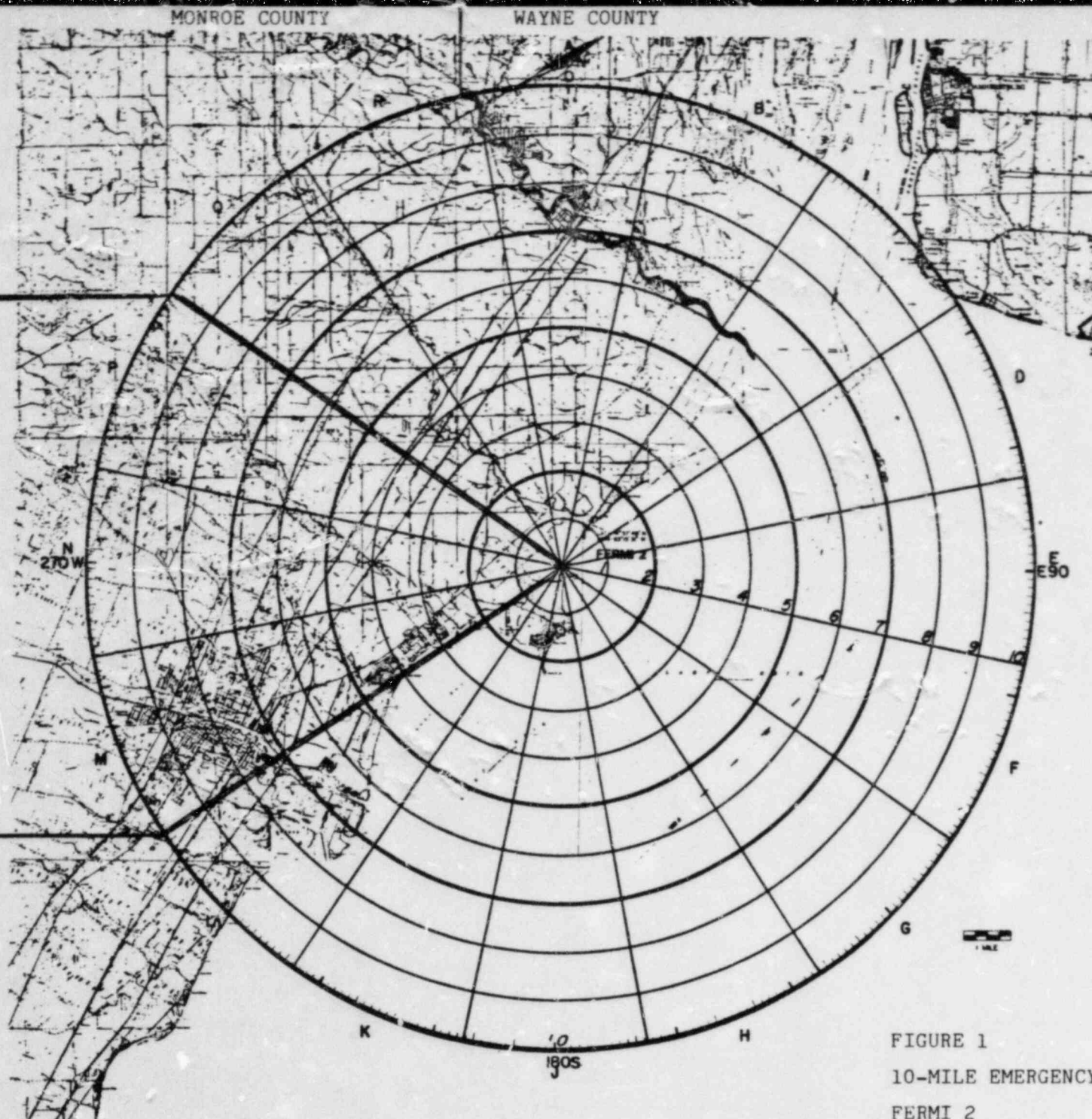


FIGURE 1  
10-MILE EMERGENCY PLANNING ZONE --  
FERMI 2

## ASSERTION 2

THE COUNTY DOUBTS THE WILLINGNESS AND TRAINING OF  
VOLUNTEER EMERGENCY WORKERS TO CARRY OUT ALL OF THEIR  
ASSIGNED TASKS

## RESPONSE

- VOLUNTEER EMERGENCY WORKERS WILL BE WILLING TO  
PERFORM THEIR EMERGENCY RESPONSE FUNCTIONS
  - All volunteer workers will be trained and will have prior understanding of their tasks.
  - Volunteer workers will be drilled and exercised in their responsibilities.
  - The majority of volunteer emergency workers will perform their duties in non-risk areas (outside the influence of the plume exposure pathway), such as reception and congregate care centers.
  - Measures for exposure control of all emergency workers will be taken.
  - Recent research has established that volunteer public safety workers can be expected to perform effectively in a radiological emergency.
- VOLUNTEER EMERGENCY WORKERS WILL BE ADEQUATELY  
TRAINED IN THEIR RESPONSE TO A RADIOLOGICAL  
EMERGENCY
  - The majority of emergency workers perform their regular day-to-day functions in a response to a radiological emergency at Fermi 2.
  - A training program, jointly conducted by the State, County, and Detroit Edison, is available for all workers having responsibilities beyond their normal range of activities.



2.1 VOLUNTEER EMERGENCY WORKERS WILL BE WILLING TO  
PERFORM THEIR EMERGENCY RESPONSE FUNCTIONS

A. Prior Understanding Of Responsibilities

All emergency workers, volunteer as well as full-time, will be instructed in their specific emergency response activities. Section 2.2 of this response contains a description of the training program.

Further understanding of their responsibilities by individual emergency workers will be gained through participation in drills and exercises. Evaluations of these activities are conducted and remedial measures are adopted in response to the evaluations.

An annual training program will assure that County agencies and their associated volunteer workers maintain their understanding of their responsibilities in a radiological emergency response and are informed of any changes in plans and procedures.

B. Extent Of Response Activities In Non-Risk Areas

Most activities carried out by volunteer emergency workers are performed in non-risk areas of the County, either outside the EPZ or within the EPZ, but clear of any evacuation or risk area.

Table 2.1.1 summarizes the assignment location of all emergency workers (volunteer as well as full-time). As indicated in the table, only 344 of the total emergency workers in the County, or 31 percent, have full-time emergency assignment locations inside the EPZ. Significantly, most of these are public safety workers. Fire-fighters, police officers, and RADEF personnel account for 85 percent of all personnel assigned full-time within the EPZ.

Most of the emergency workers from non-uniformed agencies, i.e., from Health, Social Services and School agencies, are assigned outside the EPZ. Specifically, only 9 percent of all workers from the Health, Social Services and School agencies are assigned full-time within the EPZ.

C. Exposure Control for Emergency Workers

The protection of workers in response to a radiological emergency is further assured by the provision of a comprehensive program of radiological exposure control consisting of

- Issuance of direct-reading dosimeters to all emergency workers with any responsibilities within a risk area
- Maintenance of exposure records for all emergency workers with responsibilities within risk areas
- Field monitoring by the State for the accurate identification of risk areas
- Provisions for the rotation of emergency worker assignments in risk areas
- Training and refresher training of all emergency workers with possible responsibilities within the EPZ in the use of dosimeters and methods of radiation exposure control.

D. Drills And Exercises For Emergency Workers

The probability of effective performance by all emergency workers is further enhanced by their participation in drills and exercises. The benefits resulting from such drills and exercises include

- Additional training
- Further acceptance of their assigned responsibilities as a result of exercise participation
- Reduced apprehension concerning radiation exposure and protection
- Reinforcement of individual worker's willingness to perform their tasks arising through the cooperation with other workers.



E. Recent Research Into Volunteer Emergency Worker Behavior

Recent research has been conducted into the expected behavior of public safety workers, both volunteer and non-volunteer firefighters and police officers, in a radiological emergency at a nuclear power plant in Suffolk County, New York.\*

This research disclosed that virtually 100 percent of the police officers would respond immediately to a radiological emergency at the nuclear power station, giving such response a high priority relative to assuring their families' safety. The same survey disclosed that 55 percent of volunteer firefighters would respond immediately to a radiological emergency at a nuclear power station, and that an additional 34 percent would respond as soon as they assured the safety of their families.

Assuming a prompt notification of firefighters, using their existing alerting systems, it is estimated that this additional 34 percent would be able to assure their families' safety and report to duty within one hour after the start of notification. Consequently, a total of 89 percent of all local firefighters within the EPZ are expected to be available within one hour after the start of notification.

An even higher percentage of availability can be assumed for areas outside the EPZ, since there is no immediate concern for family security in these areas.

\*"Responses of Emergency Personnel to a Possible Accident at Shoreham Nuclear Power Plant", Social Data Analysis, Inc., November 1982.

In other research\* involving a nationwide survey of 3,500 firefighters and police officers in response to 100 disasters of all types, it was found that abandonment of duties by these local personnel was not a significant factor. In the few instances in which abandonment was found, it was attributed to poor information and ill-defined responsibilities.

\*"A Perspective on Disaster Planning",  
R. R. Dynes, and E. L. Quarantelli, Disaster  
Research Center, Department of Sociology, Ohio  
State University, 1972 (DCPA TR-77)

2.2 VOLUNTEER EMERGENCY WORKERS WILL BE ADEQUATELY  
TRAINED IN THEIR RESPONSE TO A RADIOLOGICAL EMERGENCY

Many of the emergency response activities consist of the day-to-day functions of the participating agencies. In such instances, no additional training is required to prepare workers for response to a radiological emergency. However, some response activities are not within the ordinary day-to-day responsibilities of the participating agencies and additional training of emergency workers is conducted. This training program is jointly developed and presented by the State, County, and Detroit Edison and covers such topics as:

- Basics of radiation
- Reactor operations
- Biological effects and detection of radiation
- Protection of the individual worker
- Orientation to the Radiological Emergency Response Plans, Organizations, and Procedures of the various response organizations
- Drills and Exercise

This training is assured through two sources:

- The training program for all emergency workers with possible duties within the Monroe County EPZ, and the more specialized State Department of Health training for workers with monitoring and decontamination responsibilities.
- The participation in drills and exercises and the evaluation of these activities, and the subsequent remedial training.

TABLE 2.1.1 LOCATION OF EMERGENCY WORKER ASSIGNMENTS

Agency/group	Total	Number of Emergency Workers		
		Assigned Inside EPZ	Travels Into EPZ	Assigned Outside EPZ
Police, Sheriff	157	98	-	59
Fire Departments	315	165	-	150
Health Department	91	53	-	38
Radiological Defense	30	28	-	2
Social Services	115	0	-	115
Schools	412	-	276	136
Total	1,120	344	276	500

ASSERTION 3

THE COUNTY LACKS SUFFICIENT FUNDS OR EXPERTISE TO UNDERTAKE RECOVERY AND REENTRY OPERATIONS.

RESPONSE

- o THE RESOURCES FOR CONDUCTING RECOVERY/REENTRY ACTIVITY IN THE COUNTY ARE ADEQUATE.

The County's plan is based almost entirely on existing resources, particularly manpower and fixed facilities. In any sustained radiological emergency at Fermi 2, substantial State, Federal, and volunteer resources will become available to support the County. Specific areas that will require additional resources have not been identified.

- o FINANCIAL RESOURCES FOR CONDUCTING RECOVERY AND REENTRY OPERATIONS ARE AVAILABLE TO THE COUNTY.

Both State and Federal funds could be made available to the County to assist in the recovery and reentry phase of a radiological emergency.



3.1 THE RESOURCES FOR CONDUCTING RECOVERY/REENTRY  
ACTIVITY IN THE COUNTY ARE ADEQUATE.

The County's Emergency Operations Plan, Appendix 1, Nuclear Facility Procedures, hereinafter referred to as Emergency Operations Plan, Appendix 1, is based on the use of the existing resources, particularly manpower and fixed facilities. Through the use of these resources alone, the County has the capability for carrying out the initial response, first 8 to 12 hours, of a radiological emergency at Fermi 2.

For a sustained radiological emergency, beyond the initial 8- to 12-hour period and throughout the recovery/reentry period of any radiological emergency, substantial State and Federal resources will become available to support the County. These resources are summarized in Table 3.1.1.

An adequate level of expertise for effective conduct of recovery/reentry activities is available:

- In some instances, responsible agencies are already capable of performing the response activities by virtue of their existing training and daily experience.
- In other instances, local agencies will be trained through programs already committed by the State.
- In some activities, the State will direct local agencies, and no further training of local agencies in these activities is required.

Drills and exercises are intended to demonstrate the County's expertise in conducting a response to a radiological emergency at Fermi 2. These drills and exercises will identify areas in which additional training is required. Until such exercises and remedial training are completed, there is no basis for asserting that the County lacks the expertise to conduct an effective recovery/reentry function.



### 3.2 AVAILABILITY OF FINANCIAL RESOURCES

In Attorney General Opinion No. 5741 it is stated that the Governor may authorize an expenditure from the Disaster Contingency Fund to provide State assistance to a local political subdivision when Federal assistance is not available. If the demands placed upon the funds of a local political subdivision coping with a particular disaster are unreasonably great, the governing body of the political subdivision may apply for a grant from the Disaster Contingency Fund.

Federal funds could be made available to the County residents via the third-party protection established by the Price-Anderson Act. In the TMI incident, funds were provided to the local residents for relocation based primarily on the Governor's decision to evacuate the area and the status of the reactor at the time. Claims which are denied by the insurer under PriceAnderson can be brought in the usual legal proceedings to such a remedy. It should be noted that communities are required by their very nature and by their formation to be responsible for the care and protection of the people in the community.

TABLE 3.1.1 SUMMARY OF OUTSIDE SUPPORT FOR RECOVERY/REENTRY FUNCTIONS

<u>FUNCTION, ACTIVITY</u>	<u>RESOURCE*</u>
o DECONTAMINATION	
Evacuees and vehicles	State Dept. Public Health National Guard
Property, food, water	State Dept. Public Health State Dept. Agriculture
o HEALTH	
Medical services at care centers	State Dept. Public Health
Protection of food, water	State Dept. Agriculture
Animal, pest control	State Dept. Public Health
o CONTROL OF EVACUATED AREAS	
Traffic control	State Police
Access control	State Police, National Guard
Security patrol	National Guard
o RADIOLOGICAL PROTECTION	
Hazard assessment	State Dept. Public Health
Exposure control of workers	State Dept. Public Health
Radioactive waste removal	State Dept. Public Health
o MASS CARE	
Supervision of centers	State Dept. Social Services
Evacuee registry	Red Cross
Food, lodging	Red Cross
o ADMINISTRATION	
Volunteer agency coordination	Red Cross/State Dept. Social Services
Schedule control of reentry	State Dept. Public Health

\*During the recovery/reentry phase, Federal aid and expertise can be expected from the Department of Energy, Environmental Protection Agency, and the Federal counterpart of the State agency such as Agriculture, Health, etc. This Federal aid should be coordinated through FEMA.

#### ASSERTION 4

THE COUNTY QUESTIONS WHETHER AN EVACUATION CAN BE SUCCESSFULLY ACCOMPLISHED, GIVEN THE LENGTH OF TIME NEEDED TO MOBILIZE COMMAND OFFICIALS, THE INADEQUACY OF EXISTING ROADS, AND THE FREQUENT IMPASSABILITY OF THE ROADS IN WINTER.

#### RESPONSE

o COUNTY COMMAND OFFICIALS CAN BE MOBILIZED IN AN EFFECTIVE AND TIMELY MANNER.

- The County's command and control response to a radiological emergency at Fermi 2 is identical to the response required in all emergencies, such as natural disasters, other types of technological accidents, civil disturbances, or attack. This command and control response has been demonstrated in previous emergencies to be effective and timely.
- The County's Emergency Operations Plan, Appendix 1, provides for mobilization of key County officials during the early stages of an emergency.
- The County's Emergency Operations Plan, Appendix 1, provides for decision-making in the event that necessary County command officials cannot be mobilized.
- Evacuation response functions are staged over a period of several hours, and effective evacuation can begin with only partial mobilization of the emergency work force.

o EXISTING ROADS ARE ADEQUATE FOR EVACUATION AND THERE IS NO DOCUMENTATION TO SUBSTANTIATE THEY ARE FREQUENTLY IMPASSABLE.

- Roads are adequate for effective evacuation under all weather conditions. Under adverse weather conditions, evacuation may require a longer time; however, not to an extent such that evacuation is ineffective as an emergency response.
- There are no facts to substantiate that main roads are frequently impassable.
- The County's Emergency Operation Plan, Appendix 1, provides measures for effective evacuation in instances of adverse weather conditions.

4.1 COUNTY COMMAND OFFICIALS CAN BE MOBILIZED IN AN EFFECTIVE AND TIMELY MANNER.

A. The County's Command and Control Response

The County's Emergency Operations Plan, Appendix 1, provides for the mobilization of key County officials for all types of emergencies, natural disasters, technological accidents, civil disturbances, and attack. This mobilization has been demonstrated repeatedly in natural disasters such as tornadoes and floods. The mobilization of key County officials in a radiological emergency is identical to that used in other emergency situations.

Timely warning of key County officials is assured by the

- Dedicated telephone line from Fermi 2 to the Monroe City/County Joint Communications Center.
- Established sequences of warning (notification) of key County officials and alternates by the County Warning Officer.
- Communications are manned 24 hours per day in the Joint Communications Center and at Fermi 2.

B. Timing of Alerting of County Officials

The County's Emergency Operations Plan, Appendix 1, provides for the notification of key County officials commencing with the declaration of an UNUSUAL EVENT at Fermi 2. The Appendix calls for the mobilization of the County's Emergency Operations Center (EOC) at the declaration of an ALERT. At this stage, the Joint Communication Center will perform the notification of all agencies involved in a response.

C. Alternate Decision-Making Procedures

Alternates (backups) and the procedures for notifying these alternates for key County officials are designated in Appendix 1. Additionally, the chain of command and the procedures for ordering emergency responses are specified.



D. Effectiveness of Partial Response

In any reasonable accident scenario, the required emergency response actions begin with a geographically limited portion of the 10-mile EPZ depending upon meteorological conditions and may, with the passage of time, extend to broader portions of the EPZ. This is particularly true of those activities requiring the majority of emergency manpower. Specifically, such activities include traffic control, perimeter control, transportation of persons without automobiles, and operation of Reception and Congregate Care Centers. Therefore, an effective response to the initial emergency can be made with the mobilization of only a small portion of the available emergency manpower in the County.

Within any given level of emergency response, the activities are staged over a period of several hours, and the early phases of response can be started regardless of the status of subsequent phases. For example, an evacuation can be effectively started with minimal warning (notification) and traffic control capabilities. Other response activities such as operation of Reception and Congregate Care Centers can be phased in within 60 to 90 minutes after the start of notification.

4.2 EXISTING ROADS ARE ADEQUATE FOR EVACUATION

A. Atomic Safety and Licensing Board Decision

During the Atomic Safety and Licensing Board (ASLB) hearings March 3, 1982 to April 2, 1982 evidence was presented on the adequacy of Point Aux Peaux Road as the only evacuation route from Stoney Point, the community lying directly S/SSW of Fermi 2.

As a result of the hearing the ASLB stated in their initial decision, October 29, 1982,

That the evidence of record shows that Pointe Aux Peaux Road is feasible for evacuating persons from Stoney Point and that this is so despite the fact that the road lies near the reactor and despite the fact that persons using the road would be forced to travel toward the reactor for a short distance.

B. Normal Weather Conditions

Under normal weather conditions, the evacuation of all automobile traffic from the 10-mile EPZ, as shown in Figure 4.2.1, can be accomplished in 4 hours. Route-by-route evacuation times, ranging from 2 hours 40 minutes to the maximum of 4 hours, are summarized in Table 4.2.1.

The estimated evacuation times summarized in the Table account for the capacities of individual roads, and reflect the detailed loading of the EPZ population on the road system. Further, the estimated evacuation times were computed through use of a traffic simulation model that recognizes the possibility of queues (backups) and calculates the effect of these queues on the evacuation traffic flow.

C. Winter Weather Conditions

Adverse weather conditions, defined as winter weather conditions, reduce the traffic capacity on roadways as a result of reduced travel speeds and increased headways (distances) between vehicles. Empirical analysis for the 10-mile EPZ has demonstrated that adverse weather conditions can be expected to result in a reduction in roadway capacity to the level of 800 vehicles hourly per traffic lane, or 67 percent of the normal weather capacity of the road.

Under adverse weather conditions, as shown in Table 4.2.2, the estimated evacuation time for all automobile traffic from the 10-mile EPZ is 5 hours 45 minutes on the most critical evacuation route, (i.e., the route with the maximum evacuation time). Route-by-route times range from a minimum of 2 hours 40 minutes to the maximum of 5 hours 45 minutes.

4.3 FREQUENCY OF IMPASSABLE ROAD CONDITIONS

A. Impassability Due to Snow and Ice Conditions

There is no evidence to substantiate that County roads are frequently impassable due to snow and ice conditions. The County agency responsible for snow removal does not have records showing that any given area(s) presents chronic problems of impassability due to repeated failure to maintain the passability of the roads.



No public safety agency in the County has identified any road as being consistently impassable as a result of deficiencies in snow removal services.

An informal canvass of public and private services traveling on a daily basis in the County could not elicit any assertion that County roads have a particularly severe problem with impassability due to snow and ice conditions. Further, the U.S. Postal Service and the local newspaper do not have records supporting the position that County roads are frequently impassable due to snow and ice conditions.

B. Mitigating Measures for Instances Where Roads are Impassable

The County's Emergency Operation Plan, Appendix 1, provides for specific measures to support an evacuation in instances where roads are impassable due to weather conditions.

In the event of an evacuation during a period of severe winter weather, Appendix 1, provides that

- Emergency road maintenance equipment and manpower, provided from various sources and under the control of the County's Emergency Operations Center (EOC), will support the maintenance of roadways required for evacuation, (Appendix 1, Public Works Annex).
- The Law Enforcement Operations Officer will confirm evacuation of households according to Appendix 1, Law Enforcement Annex.
- Buses will be available to transport the population without automobiles or are unwilling to evacuate in their private automobile (Appendix 1, School Annex).
- Rescue vehicles, under the direction of the County EOC, will lend support to the evacuation of the population unable or not willing to evacuate in their private automobiles (Appendix 1, Health and Medical Annex).
- Impediments to traffic routes will be removed by order of the law enforcement officer at the scene (Appendix 1, Law Enforcement Annex).

Table 4.2.1 SUMMARY OF EVACUATION TIMES BY ROUTE, FERMI 2  
EPZ\*

<u>Route</u>	<u>Population</u>	<u>Vehicles</u>	<u>Time to Evacuate (Hours)</u>
U.S. Turnpike	7,725	3,371	4:00
Route 85	2,239	977	2:40
Allen Road	2,323	1,014	2:40
I-75 North	13,815	6,029	2:45
U.S. 24 North (Telegraph)	5,747	2,508	2:40
I-275 North	12,697	5,541	2:45
West Road	1,214	530	2:40
Scofield-Carleton Road	942	411	2:40
Stoney Creek Road	1,407	614	2:40
Blue Bush Road	926	404	2:40
Stewart Road	944	412	2:40
North Custer Road	4,679	2,042	3:15
South Custer Road	4,209	1,837	2:45
Dunbar Road	919	401	2:40
Albain Road	770	336	2:40
U.S. 24 South (Telegraph)	3,304	1,442	2:40
Route 125 South	6,063	2,646	3:45
I-75 South	16,725	7,299	3:15

\*"Estimate of Evacuation Times", Enrico Fermi Atomic Power  
Plant Unit 2, PRC Voorhees, Revised March 1982.

TABLE 4.2.2 SUMMARY OF EVACUATION TIMES

	Permanent Population	Permanent Population Vehicles	Transient Population	Transient Population Vehicles	Evacuation Capacity per Hour	Notification Time	Work to Home Time	Permanent Population Response Normal Conditions	Permanent Population Response Adverse Conditions	Transient Population Response Normal Conditions	Transient Population Response Adverse Conditions	General Population Evacuation Time - Normal Conditions	General Population Evacuation Time - Adverse Conditions	Confirmation Time*	Special Population Evacuation** Time - Normal Conditions	Special Population Evacuation** Time - Adverse Conditions
Within Two Miles																
Zones																
1	3,607	1,551	200	57	3,600							2:40	2:40	2:40	2:40	2:40
Within Five Miles																
Zones																
2	6,030	2,593	8,800	2,514	4,800							3:00	4:15	3:00	3:00	4:15
3	3,045	1,309	2,000	571	3,600							2:40	2:40	2:40	2:40	2:40
Within Ten Miles																
Zones																
4	45,001	18,842	100	29	14,400							3:45	5:45	3:45	3:45	5:45
5	8,911	3,696	0	0	6,000							2:45	3:30	2:45	2:45	3:30
6	23,507	9,422	650	179	12,600							4:00	5:45	4:00	4:00	5:45
Total EPZ	90,101	37,813	11,750	3,350	34,800							4:00	5:45	4:00	4:00	5:45

\* The confirmation process will begin during evacuation and run concurrently until the evacuation process is complete

\*\* In all instances, the evacuation of special population segments will be completed prior to the completion of general population evacuation

Estimate of Evacuation Times, Enrico Fermi Atomic Power Plant, Unit 2,  
PRC Voorhees, Revised March 1982.

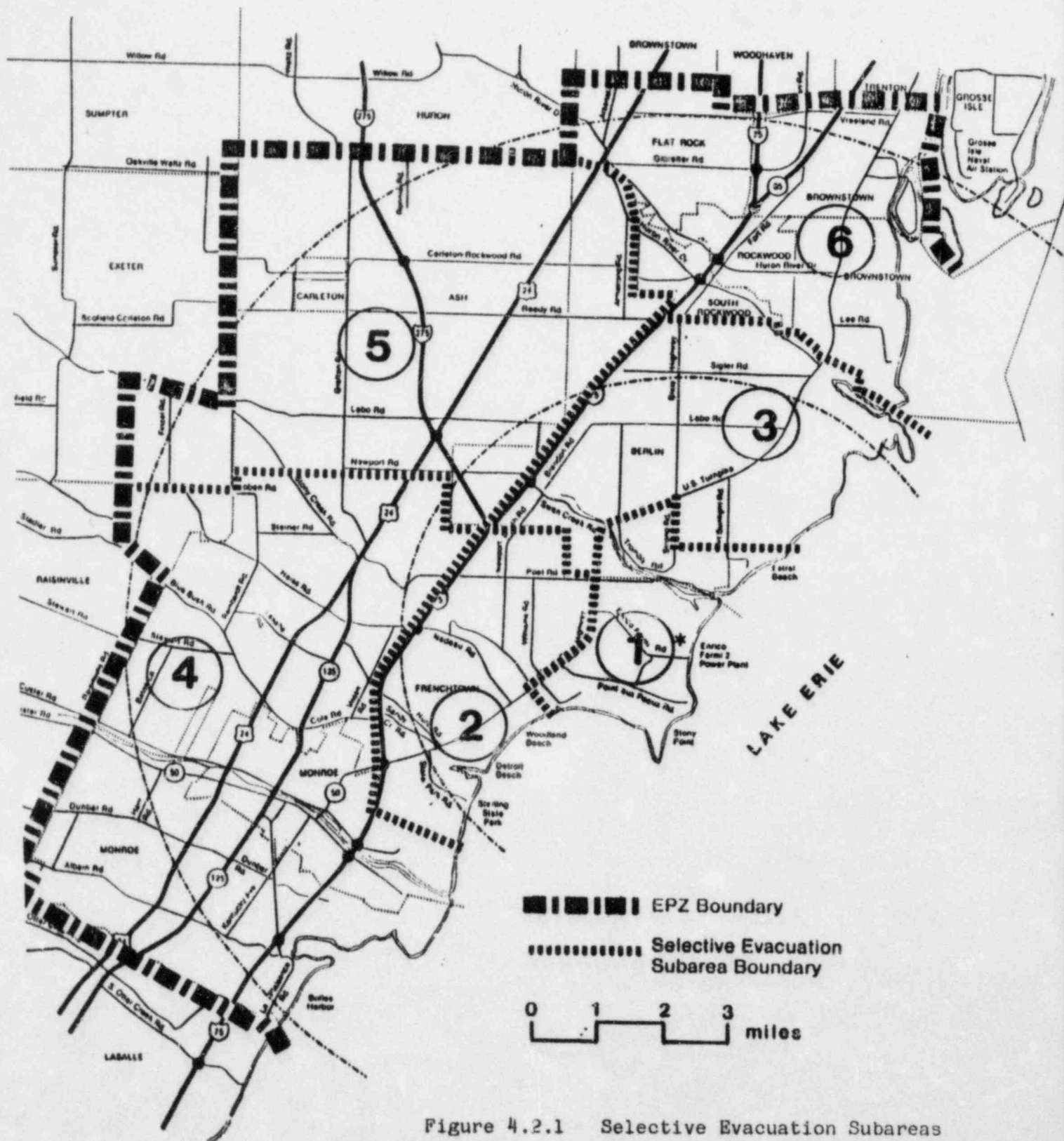


Figure 4.2.1 Selective Evacuation Subareas

ASSERTION 5

THE COUNTY LACKS SUFFICIENT PERSONNEL TO STAFF  
DECONTAMINATION/RECEPTION CENTERS.

RESPONSE

- o SUFFICIENT STAFF ARE AVAILABLE TO MAN DECONTAMINATION/RECEPTION CENTERS.
  - Five agencies, Health, Fire, Police or Sheriff, Social Services, and Schools have major responsibilities for the operation of Decontamination/Reception Centers. These five agencies will supply a total of 42 persons for the staffing of each Reception Center.
  - Agencies assigned to Decontamination/Reception Centers have sufficient manpower to perform their Reception Center duties as well as their response activities elsewhere in the County.
- o WILLINGNESS TO WORK IS NOT AN ISSUE.
  - Willingness to work at Decontamination/Reception Centers is not considered an issue since Reception Centers are located outside evacuated areas and workers are not required to enter a risk area to report for duty.



5.1 SUFFICIENT STAFF ARE AVAILABLE TO MAN  
DECONTAMINATION/RECEPTION CENTERS.

Table 5.1.1 summarizes the staffing requirements for Decontamination/Reception (hereafter called Reception) Centers. As indicated in Table 5.1.1 major Reception Center responsibilities are divided among five agencies and require a total of 42 persons assigned to each center.

Table 5.2.1 summarizes the manpower requirements throughout the entire County for those five agencies having major responsibilities at Reception Centers. As indicated in Table 5.2.1, agencies with major responsibilities at Reception Centers have sufficient manpower to perform their Reception Center duties, as well as their assignments elsewhere in the County.

Additional manpower, not reflected in Tables 5.1.1 and 5.2.1, is expected to be available for the support of activities at Reception Centers. Significant sources of such support include:

- American Red Cross in the areas of evacuee registration, inquiry, and the coordination of volunteer assistance.
- Michigan State Police in the area of traffic control in the vicinity of Reception Centers and in maintaining security and order at the Centers.
- Roads and Public Works Departments in the transportation of materials for Reception Centers and in the provision of temporary facilities.

5.2 WILLINGNESS OF VOLUNTEER STAFF TO WORK AT  
DECONTAMINATION/RECEPTION CENTERS

The County Emergency Operations Plan, Appendix 1, calls for Reception Centers to be outside the evacuated areas and consequently, does not require workers at an active Reception Center to pass through numerous checkpoints to reach an activated Reception Center.

TABLE 5.1.1 STAFFING DECONTAMINATION/RECEPTION CENTERS  
(AGENCIES WITH MAJOR RECEPTION CENTER RESPONSIBILITIES)

<u>FUNCTION</u>	<u>STAFF REQUIRED BY PARTICIPATING AGENCY</u>				
	Health	Fire	Police	Social Services	Schools
Registration	-	-	-	4	4
Decontamination	2	6	-	2	2
Custody of School Students	-	-	-	-	6
Public Safety	-	-	2	-	-
Public Health, Emergency Medical Services	4	-	-	-	-
Communications	-	1	-	-	-
Coordination of Reception Center	2	-	-	5	-
Maintenance, Goods, Transport	-	-	-	-	2
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
Total, Single Reception Center	8	7	2	11	14
Total, 5 Reception Centers	40	35	10	55	70

TABLE 5.2.1 OVERALL STAFFING REQUIREMENTS AND AVAILABILITY  
(AGENCIES WITH MAJOR DECONTAMINATION/RECEPTION CENTER RESPONSIBILITIES)

	<u>STAFF REQUIRED BY PARTICIPATING AGENCY</u>				
	<u>Health</u>	<u>Fire</u>	<u>Police</u>	<u>Social Services</u>	<u>Schools</u>
Staff Requirements, 5 reception centers	40	35	10	55	70
All other emergency response activities	51	280	147	60	342
Total Requirements	91	315	157	115	412
Total Manpower Available	90	603	335	120	700+

ASSERTION 6

THE COUNTY QUESTIONS WHETHER POTASSIUM IODIDE SUPPLIES CAN BE MADE AVAILABLE QUICKLY.

RESPONSE

- o POTASSIUM IODIDE CAN BE MADE AVAILABLE TO COUNTY RESIDENTS ON A TIMELY BASIS.

Both the Michigan Emergency Preparedness Plan (MEPP) and the County's Emergency Operations Plan, Appendix 1, provide for the capability for the County to distribute potassium iodide (KI). It is therefore within the jurisdiction of the County to respond to its residents concerning this matter.

- 6.1 POTASSIUM IODIDE CAN BE MADE AVAILABLE TO THE COUNTY RESIDENTS ON A TIMELY BASIS.

The MEPP (Annex Q) provides for the State to distribute KI to all State emergency workers and indicates that local health department directors or their equivalent are to develop and implement plans for the acquisition, storage, and distribution of KI to County emergency workers and County residents based on guidance provided by the State department.

Based on this, the County has the mechanisms in place by which it can formulate procedures for the distribution of KI to the residents in a manner that is compatible with the County (Appendix 1, Health and Medical Annex).

## ASSERTION 7

THE COUNTY BELIEVES THE MONITORING SYSTEMS NOW IN PLACE TO DETECT RADIOLOGICAL RELEASES ARE INADEQUATE.

## RESPONSE

### o THE PRESENT MONITORING SYSTEM IS ADEQUATE

The present system employed at Fermi 2 for detecting radiological releases from the plant and determining their effects offsite is adequate to respond to normal operation of the plant, as well as emergency conditions.

### 7.1 ATOMIC SAFETY AND LICENSING BOARD (ASLB) SUMMARY DISPOSITION.

Contention 5, as brought before the ASLB read as follows:

The design of the radiation monitoring system is insufficient and incomplete as specified below to adequately monitor radiation releases (a) to demonstrate, during normal operation, conformance with Part 20 and Appendix I to 10 CFR Part 50 and (b) to implement the offsite protective actions following accidents set forth in the Applicant's emergency plan. The deficiencies of the radiation monitoring system are:

(a) There is no continuous monitoring system on the lake (for air and water) that can be read remotely; and (b) There is no continuous monitoring system at the site boundary that can be read remotely.

On November 16, 1981, the NRC Staff made a motion to the ASLB for summary disposition of Contention 5 supported by an affidavit and discussion that no material issue of fact existed to require litigation of Contention 5. On December 11, 1981, Detroit Edison filed a motion for summary disposition in support of the NRC Staff that was also supported by affidavit and discussion.

After due consideration of the motions, the ASLB on January 27, 1982, in a Memorandum and Order of the Licensing Board, issued a summary disposition of Contention 5 supporting the fact that the monitoring systems at Fermi 2 are in compliance with regulations and are adequate.



7.2 FINAL ENVIRONMENTAL STATEMENT (FES) RELATED TO THE  
OPERATION OF ENRICO FERMI ATOMIC POWER PLANT, UNIT  
NO. 2, USNRC, AUGUST 1981

In a letter dated July 22, 1981, the City of Monroe, Community Development Department, commented on the NRC Draft Environmental Statement for Fermi 2, specifically in the context of placing a monitoring device on the City water intake system (FES, USNRC August, 1981, p. A-70). NRC Staff responded directly to this comment on pages 10-6 and 10-7 of the FES and

. . . concluded that the radiological monitoring program of the applicant, including the present method of sampling drinking water in the City of Monroe water intake, is acceptable . . .

ASSERTION 8

THE COUNTY DOUBTS THAT THE METHOD CHOSEN FOR DECONTAMINATION OF CARS AND TRUCKS IS ADEQUATE.

RESPONSE

o THE DECONTAMINATION PROCEDURE RECOMMENDED IS ADEQUATE

The hose-down decontamination procedures for vehicles described in the County Emergency Operations Plan, Appendix 1, Fire Annex (I-1-6) is adequate and is considered state-of-the-art.

8.1 DECONTAMINATION PROCEDURE IS ADEQUATE

A survey was conducted of nuclear facilities for procedures presently in use or considered for use should vehicles become contaminated with radioactive material. In all cases, the decontamination procedure consisted of a wash-down with a hose and water, or a wipe-down with wet or dry rags, or a combination of the two. These two methods are considered state-of-the-art for the industry and are acceptable to the Health Physicists. Therefore, the hose-down method stated in the Appendix 1, Fire Annex is adequate.