UNITED STATES OF AMERICA NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In The Matter of

COMMONWEALTH EDISON COMPANY

Docket Nos. 50-454 OL 50-455 OL

(Byron Nuclear Power Station, Units 1 & 2)

STIPULATION

Intervenors, DAARE/SAFE and the Rockford League of Women Voters, Commonwealth Edison Company, and the NRC Staff hereby agree and stipulate that the attached affidavits may be admitted as Intervenors' Exhibits in the hearing record subject to the following conditions and understandings:

 Only those portions of the affidavits which are not marked through are being offered into evidence;

(2) None of the witnesses sponsored by Intervenors has expertise in determining sheltering capabilities of specific structures;

(3) Only those portions of the "Rockford League of Women Voters--DAARE/SAFE Radiological Emergency Response Survey Ambulance Medical Services" which are attached hereto which the Board accepted during the hearings are being offered in evidence;

8305170569 830512 PDR ADOCK 05000454 PDR (4) Those portions of the affidavits of Gary Montel, J. Michael Maloney, Charles Lamb, David Miller, and David Turner for which there is a "13" noted in the margin are relevant only to Intervenor's amended contention 13. As such, this evidence is being offered only to identify the information which these witnesses desire to communicate to emergency planners.

COMMONWEALTH EDISON COMPANY

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NRC STAFF	
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AFFIDAVIT OF PAUL HOLMBECK

The attached statements, questions and answers, and exhibits constitute my testimony in the above-captioned proceeding. The testimony is true and accurate to the best of my knowledge, information, and belief.

Paul Holmbeck

Subscribed and sworn to before me this _____ day of _____, 1983.

Notary Public

TESTIMONY OF PAUL HOLMBECK ON EMERGENCY PREPAREDNESS: DAARE/SAFE CONTENTION 3 - ROCKFORD LWV CONTENTIONS 19 AND 108

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Affiant states that he has read and is familiar with the documents attached hereto.

- Q. Please state your name.
- A. My Name is Paul Holmbeck.
- Q. What is the purpose of this testimony?
- A. The purpose of this testimony is to present the nature and results of my investigation into the adaquacy of Emergency Plans for the Byron Nuclear Generating Station ("Byron Station") in support of DeKalb Area Alliance for Responsible Energy/Sinnissippi Alliance for the Environment) ("DAARE/SAFE") Contention 3 and Rockford League of Women Voters ("Rockford LWV") Contentions 19 and 108 all of which address emergency preparedness.
- Q. What is your educational background?
- A. My higher education background consists of two years of study at Duke University, 1979-81, during which I studied primarily political science and economics. During this last academic year (1981-82), I studied development (third world) economics and political theory at the University of Kent in Canterbury, England. While at Duke, I was on the Dean's List during 1980 and again in 1981 and received Class Honors during 1981. My most

notable work was a dissertation prepared at the University of Kent between April and July, 1982, on Dependency Theories of Development. I am presently on a years leave of absence from Duke.

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Since 1980, I have also been trained in wilderness emergency procedures concurrent with my role as a rock climbing and backpacking instructor. Fashioned and originally trained by North Carolina Outward Bound, Wilderness Initiatives at Duke maintains rescue and evacuation procedures. Those procedures include accident assessment by the instructor in the field, emergency communications and guidelines for the content of those communications; evacuation procedures including emergency transportation and protocols for calling in additional support from local rescue squads. I have contributed to the revision of these procedures and the developing of more effective and comprehensive exercises.

Emergency operations in the wilderness also require flexibility to deal with changing condition of the victim and varying environmental factors, (e.g., weather and land characteristics). Careful calculations must be made as to the feasibility of evacuation and the costs and benefits gained from delayed evacuation of injured persons.

I have also had the experience of coordinating a search and rescue exercise in North Carolina's Pisgah National Forest involving almost 100 emergency workers. Search and rescue operations reguire special attention to coordination and communications. Selecting the area over which the emergency response is to be carried out includes the use of sectoring, routing of response groups and, of course, assuring the safety of emergency personnel.

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Q. Are you familiar with the term "protective action"?

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A. Yes, I am. A protective action or protective measure is any action taken to avoid or minimize the projected dose resulting from a release of radioactivity. Protective actions for the Byron Station include evacuation: sheltering: access control: and food, water, and milk control. Protective actions are described in the following documents:

EPA-520, 1-75-001 "Manual of Protective Action Guides and Protective Actions for Nuclear Incidents," ("EFA-PAGs"): NUREG 0396-EPA, 520/1-78-016 "Planning Basis for the Development of State and Local Government Radiological Emergency Response Plans in Support of Light Water Nuclear Power Plants;" and the International Atomic Energy Agency "Planning for Off-site Response to Radiation Accidents in Nuclear Facilities" (1978) ("IAEA-planning").

I have read and am familiar with these documents. Q. Do you know what is meant by "sheltering" pursuant to the Illinois Plan for Radiological Accidents, 'Byron,' Volume VI, Preliminary Revision 0 ("IPRA-Byron, Revision 0")?

A. Yes, I do. Sheltering essentially means placing as much of a buffer between oneself and the plume of radioactive material as one can without leaving the affected area. The degree of dose reduction afforded will be determined by the type of building in which shelter is sought, e.g., by the construction materials used in the building and by the number of floors or walls between the plume and the people seeking shelter; and by the extent to which ventilation can be restricted in the building.

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- Q. What must be done to translate this data into determinations as to the value of sheltering as a protective measure?
- A. According to the EPA-PAGs and IAEA-Planning, the information on the proposed structures can be used to approximate values for the dose reduction through sheltering. These approximate values are termed 'shielding factors' or 'reduction factors.' Explanitory portions of IAEA-Planning are attached to this Affidavit as Exhibit A.
- Q. Have you gathered any data relevant to the determination of the adequacy of sheltering as a prescribed protective action? For persons in the Rycon, EF2?
- A. Yes, I have. Directors, administrators, or superintendents at the following facilities have indicated to me that their buildings have no basement or windowless areas which could be used for sheltering their populations:
 - The White Pines Manor Nursing Home in Oregon population: 55 patients, 15 staff (Bowes Affidavit, p. 7).
 - The Pinecrest Manor Home for the Aging in Mt. Morris - Population: 112 patients, 40 staff (Montel Affidavit, p. 9).
 - 3. The Oregon Annex High School population: 80 rubul-t students, 21 staff (lamb Affidavit, p. 6).
 - The Ogle County Trainable Center in Mt. Morris under population: 40 students, 17 staff. Partial Pasement. (Id).

- Mt. Morris Elementary School population: 343 students, 26 staff (Turner Affidavit, p. 10).
- Mt. Morris Junior High School population: 189 students, 16 staff (Id).
- Mt. Morris Senior High School population:
 235 students, 25 staff (<u>Id</u>).

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- 8. Deal River Community School population: 413 students, 36 staff (Maloney Affidavit, p. 10). redul-L.
- 9. Lorado Taft Field Campus population 90 to 150 students, 30 staff (Interview with John Sanders, facility manager, Turesday, February 8, 1983).
- 10. Village of Progress population: 100 students, 16 staff (Interviews with Robert Glazer, Executive Director, February 9 and February 17, 1983).
- 11. Byron Mary Morgan School population: 388 students, 43 staff (Survey responses from Superintendent Bill Brown, January 1983).
- 12. Stillman Valley High School population: 462 students, 33 staff (Miller Affidavit, p. 10).
- Meridian Junior High School population: 341 students, 20 staff (<u>Id</u>).

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14. Highland Grade School and Early Childhood population: 417 students, 20 staff (<u>Id</u>).

The following camps and recreational areas host transient populations which have no basement or windowless areas available to them:

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1. The Byron Dragway - population: 500 to 1500 persons on weekends; 12,000 maximum. No shelter whatsoever. (Phone interview with Brenda VanHollen, December, 1982; interview with owner Ron Leek cited in Byron FSAR 2.1.3.4.)

- Lake Louise population: 2000 to 3000 persons;
 4000 to 5000 maximum reached three times per year. No Sheltering available. (Phone interview with Connie Jeffry, December, 1982).
- 3. Castle Rock State Park population: up to 400 persons on weekends. House, office and barn in park. (Interview with site Superintendent, Grant Afflerbaugh, February 4, 1983; letter attached from Mr. Afflerbaugh, dated February 8, 1983. as Exhibit⁴⁴).
- 4. Lowden Memorial State Park population: 450 overnight campers. Sheltering in vehicles only. (Interviews with site Superintendent Roy Hayes January 14, January 26, and February 3, 1983).
- 5. Camp McCormick Girl Scout Camp population: 100 to 150 campers. Tents used as shelters; wooden buildings, no basement. (Interviews with Director, Ruth Little, January 13 and February 4, 1983.)
- Oregon Park District population: 500 visitors.
 No sheltering facilities. (Phone interview with Tony Kubat January, 1983.)
- 7. Camp Emmaus population: 60 to 80 visitors;

maximum of 130 reached two weeks per year.
(Phone interview, December, 1982.)

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- 8. Lake LaDonna population: 1000 to 1600 visitors; as many as 3000 on holidays. (Phone interview with Lemont Gaston, February, 1983.)
 - 9. River Road Camping and Marina population: 800 persons staying in tents or campers. (Phone interview with owner, January, 1983.)
- 10. Motosport Park population: 2000 spectators; 10,000 spectators twice per year. No shelters. (Phone interview with Joseph Vincer, December, 1982.)
- Q. Have you translated this data into reduction factors as explained earlier?
- A. Yes. After discussions with facility owners identified in the last question and administrators, I have generally located those facilities on the tables provided in IAEA-Planning on Representative Reduction Factors for Deposited Radioactivity (Table 1 in Appendix I, p. 49a, IAEA-Planning) and Representative Reduction Factors for Cloud Source (Table 2, <u>Id</u>.). I have attached these tables to this Affidavit as Exhibits B and C respectively

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Table II assigns a reduction factor of 1.0 from cloud source radioactivity to those populations which are outside or in vehicles (Exhibit C). In the Byron EPZ (3 mile radius), this would include thousands of persons at the Byron Dragway, the Motosport Park, the River Road Camping and Marina. Lake Louise, Castle Rock State Park, Lowden State Park, the Oregon Park District, and Lake LaDonna have similar sheltering potential and are located in the Byron Station EP2. The reduction factor for deposited radioactivity for these populations would range between 0.5 (vehicles) to 0.7 (outside). (Exhibit B.)

According to IAEA figures, wood frame structures without basements have poor cloud source reduction factors (0.9) and moderate deposited radioactivity reduction factors (0.4). Camp McCormick Girl Scout Camp, Camp Emmaus, Lorado Taft Field Campus, and a number of other recreational structures and private homes are facilities of this nature.

Knowledge that sheltering of at least 2908 school children will take place in structures without basements or windowless areas (listed above) will also be of importance in determining the value of sheltering as a protective action. As seen in Table 1, the reduction factor for deposited radioactivity is far superior in buildings with basements (0.03) than without (0.2), and in Table 2 the cloud source reduction factor for masonry structures without basements is about 0.6 while those with basements have a more favorable reduction factor of 0.4. (Exhibits B and C, respectively)

- Q. Have you made similar inquiries regarding sheltering potential for the less-mobile populations in nursing homes?
- A. Yes, I have. I have distributed excerpts from the EPA-PAGs and the IAEA (Id.) regarding sheltering to nursing home administrators Thomas Bowes and Gary Montel.

During conversations in December of last year and the first two months of this year, they have expressed concern about the feasibility of sheltering. Neither facility has basement or windowless areas in which to shelter. Both Mr. Montel and Mr. Bowes are aware that ventilation can be restricted by turning off kitchen fans and shutting doors and windows. They still feel that, due to a rapid natural ventilation, restriction of ventilation would have to be engineered. These are all particularly important considerations in light of the fact that evacuation for a sizable percentage of nursing home patients has been shown to be infeasible (Affidavits of Bowes and Montel).

Q. Is there any consideration given in IPRA-Byron, Revision 0, to administering potassium iodide to persons for whom a timely evacuation is not possible?

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- A. No, there is not.
- Q. According to Commonwealth Edison's Generic Generating Stations Emergency Plan ("GSEP"), what document will be used as a basis for recommendations to off-site authorities for protective actions for the off-site public?
- A. Section 6.3.1 of the GSEP states that the EPA report EPA-520/1-75-001, "Manual of Protective Action Guides and Protective Actions for Nuclear Incidents" ("EPA-PAGs"), will be used for this purpose.
- Q. According to NUREG 0654 FEMA Report 1, Revision 1, what document is to be used as a guideline for state and local authorities in establishing the capability for implementing protective measures including sheltering?

- A. Section II.J.9 of NUREG 0654 calls for compliance with EPA-520/1-75-001, PAGs.
- Q. According to the EPA-PAGs, what are the prerequisites for a proper choice between sheltering and other protective measures?

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- A. Planning. Planning is described in the EPA-PAGs as the gathering of information needed to select the optimum alternative in an immediate response (at 1.2). This will include an analysis of local conditions and constraints and any other factors necessary to determine the viability of each protective action (1.2-1.3). For sheltering this implies an assessment of the availability of sheltering areas as well as their shielding effectiveness and air changes per hour.
- Q. Have you found any evidence that Commonwealth Edison ("CECo") or IESDA planners have done the necessary sitespecific investigation into the feasibility of sheltering as a protective action?
- A. No, I have not. Despite the fact that both the Applicant's GSEP (at 6.3.1) and Byron Annex to that plan include sheltering as among the protective measures it could recommend to off-site authorities in the event of an emergency, the Applicant has, to my knowledge, made no attempt to study the protective value of sheltering for populations around the Byron plant. I have interviewed school officials, park rangers, nursing home administrators, and other special facility representatives and have yet to hear of a single attempt by planners to investigate the availability of suitable sheltering facilities.

State planners have been equally negligent. Volume 1 of the IPRA and the Byron volume of that plan indicate a range of protective actions which include sheltering (IPRA-Byron, Revision 0, VI (2), pp. 11-12), but in my discussions and interviews I have found no indication that state planners have made the necessary determination of dose reductions possible through sheltering. My findings are further supported by Affidavits of Montel (p.2), Bowes (p. 6-7), Miller (p. 10), Turner (p. 10), Maloney (p. 10), and Lamb (p. 6).

- Q. Does the IPRA-Byron, Revision O. make provisions for persons without vehicles or those unable to transport themselves in the event of an evacuation?
- A. No. The IPRA-Byron, Revision 0, does not include means for protecting those persons whose mobility may be impaired due to such factors as institutional or other confinement as developed in NUREG 0654 II.J.10.d and required by 10 CFR 50.47 (b) (10), which stipulates that a range of protective actions must be developed for the plume exposure pathway EPZ for the public.

The IPRA-Byron, Revision O, designates school buses, the Oregon police, and the Oregon Ambulance Service to evacuate those persons who do not have adequate or readily available transportation. IPRA-Byron, Revision O, VI (2), pp. 124, 148, 164, 188, 208, 224; VI (2a), p. 27; (2c), p. 19; (2d), p. 17; (2e), p. 30; (2f), p. 19; VI (3), p. 3.

I. During an evacuation the use of school buses as vehicles for evacuation of the general public 7.

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without transportation is incapable of affording a prompt and timely evacuation of that population.

- A. Through interviews with School Superintendents Miller, Turner, and Maloney during February, 1983, and Ogle County Assistant Superintendent Charles Hayes during the week of January 17, 1983, I have determined, dedocernteling portion of this testimony, that the number of school buses owned and operated by school districts are inadequate to effect a timely evacuation of schools in the EPZ.
- B. There are no posted school bus stops or routes and there is no plan or provision to inform the public as to where they are to Corgregate for the IPRA-Byron, Revision 0, VI (3), p. 3, "Populations with Special Transportation Requirements." The entire Sheltering Guide VI (3) pp. 1-4, is attached to this Affidavit as Exhibit D.
- C. School buses are considered unsafe for transportation of special facilities.
 - L) Interviews with Charles Lamb, Director of the Ogle County Educational Coop during February, 1983, indicated that the students at the Mt. Morris Trainable Center cannot be safely evacuated in regular school buses.

(Lamb Affidavit at 5) Interviews with Thomas Bowes, Administrator of the White Pines Nursing Home in Oregon, during December, 1982, and January, 1983, indicated that he has approximately 15 persons for whom bus travel is unsafe. (Bowes Affidavit at 4)

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- 3) Interviews with Gary Montel, Administrator at Pinecrest Manor Home for the Aging during January and February, 1983, indicated that bus travel would endanger the health and safety of thirty to forty persons at his facility. (Montel Affidavit at 6)
- II. IPRA-Byron, Revision 0, plans for the evacuation of homebound private residents are incapable of affording a prompt and timely evacuation of that population. VI (3), pp. 2-3. (Exhibit D.)
 - A. Lists of shut-ins are not available as stated at VI (3), pp. 2-3. (Exhibit D.)
 - The CECo "polio list" is presently kept in Dixon, too far (16 miles) away from the Ogle County EOC to be of timely use during an emergency.
 - The plan claims that the Yellow Bird Senior Citizens Center maintains a list of shut-ins which is one of

several lists for Ogle County. A phone conversation with Jane Reid, Director of the Yellow Bird Senior Citizens Center, dated February 20, 1983, revealed that the Yellow Bird Center has the capability of compiling a list for the Oregon area only.

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- B. The IPRA-Byron, Revision 0, plan's reliance upon the Oregon Police Department and the Oregon Ambulance Service for the transportation of nursing home patients and homebound private residents is inadequate and unworkable. (Exhibit D.)
- 1. Providing transportation to the mobility impaired is not a responsibility which is assigned to the Oregon Police Department or the Oregon Ambulance Service in either the Oregon Participating Agencies summaries, IPRA-Byron, Revision 0, VI (2) pp. 161-162, pp. 169-170, or the Annex 2c titled "Oregon Procedures" Id (2c) pp. 13-16, pp. 25-26; Figure G.2, e.l.cc, p. 97, the Oregon Agency Responsibility Matrix gives no indication that transportation of homebound private residents or nursing home patients will be provided by either the Oregon Police Department or the Oregon Ambulance Service during evacuation. IPRA-Byron, Revision 0, (2) pp. 13-16, 161-162; (2c) pp. 25-26, 169-170, and Figure G.2, e.l.cc, p. 97 are

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attached to this Affidavit as Exhibits E, F, and G, respectively. 16

2. The Oregon Police Department has five full-time and four part-time officers with two squad cars charged with the following responsibilities:

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- a. primary responsibility for public
 notification, traffic and access
 control VI (2) p. 162. (Exhibit E.)
 - standard operating procedures for law enforcement and crime prevention activities VI (2c) p. 15. <u>Id</u>.
 - c. provide transportation for shut-in
 population of Ogle County VI (3) p. 3.
 (Exhibit D.)
- 3. The Oregon Ambulance Service has 20 volunteers and two ambulances and is charged with the following responsibilities:
 - assist Oregon Police Department in notification of the public, traffic and access control if requested <u>Id</u> (2c)
 p. 26. (Exhibit F.)
 - follow standard operating procedures
 for the fire prevention and emergency
 medical services (Primary Agency Id).
 - c. assist the Oregon Police Department with law enforcement VI (2) p. 97. (Exhibit G.)
 - d. provide transportation of both private residents and nursing home patients in

the EPZ who may not have adequate or readily available transportation VI (3) p. 3 (Exhibit D.) 1'

4. The number of mobility impaired persons in the EPZ for whom, according to the plan, the Oregon Police and the Oregon Ambulance Service must provide transport, must be pieced together from various sources.

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- a. There are three nursing homes in the EPZ. Administrators of two of these facilities have indicated that about a third of their residents will require transport of greater sophistication than a regular bus (Affidavits of Montel, pp. 4 and 6, and Bowes, pp. 2 and 4). This is a total of about 50. Adding one third of the other nursing home's population brings the figure to about 80. (A phone interview in January, 1983, indicated tha the Neighbors Nursing Home in Byron had 94 residents.)
- Jane Reid, the Director of the Yellow
 Bird Senior Citizens Center, stated in
 a letter dated February 4, 1983, that
 her facility delivers meals to as many
 as 16 homebound persons each day in
 Oregon alone. She also noted that 20-30
 additional Oregon area elderly are provided with transportation to the center

on a daily basis. These people have no other means of transportation. The letter from Jane Reid is attached to this affidavit as Exhibit H.

c. Joyce Allen, R.N., of Allen Home Health Agency, Inc., responded to my inquiries on the same day, February 4, 1983. She reported that her agency cares for ten patients in the EPZ, all of which would require assistance. The letter from Ms. Allen is attached to this Affidavit as Exhibit I.

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- Intermediate the state of the time of use a wheelchair of weak of the time of use a wheelchair of weak of the this data is taken is attached to this affidavit as Exhibit J. Since 21,622 permanent residents live within the EPZ, approximately 238 are confined to bed or home. (Exhibit J.)
- 5. A member of the Oregon Ambulance Service Board of Directors, Carl Swon, has indicated to me in interviews dated February 7, 14, 16 and 17 that

all of these tasks requested simultaneously would be beyond the capabilities of the Oregon Ambulance Service.

- a. He has stated this in affidavit.
- b. The Oregon Mayor, Jim Barnes, who is also an ambulance service member, read the Swon Affidavit on February 16 and concurred in Mr. Swon's assertions.
- c. Mr. Swon indicated during those meetings that about 4-6 ambulance service volunteers would remain in the area to conduct emergency operations. Mr. Swon was not sure if he personally would stay or evacuate with his family,
- Q. Have other persons with experience in dealing with volunteer or part-time personnel commented to you regarding the availability of these personnel during a radiological emergency?
- A. Yes, individuals in key coordinating positions such as school superintendents and ambulance service directors have indicated that they are unable to notify personnel when other employment scatters them throughout the county. Additionally, the willingness of volunteer, part-time personnel to serve as emergency workers during a nuclear disaster at the Byron Station is not taken for granted by individuals with close personal knowledge of ambulance, nursing home and bus service personnel. (Affidavits of Bowes, p. 6, Miller, p. 6, Turner, pp. 6-7, and Maloney, p. 6.) Others are certain that most volunteer, part-time

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personnel will not be available (Swon, p. 5; Lamb, p. 4). Does the IPRA-Byron, Revision 0, rely on the availability of volunteer personnel?

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A. Yes. The contribution of volunteers to a number of essential emergency services, including notification of the public, access and traffic control, transport of the mobility impaired, emergency medical services, fire protection and law enforcement is the backbone of the emergency planning effort in the Byron EPZ.

> Fire Protection District and ambulance squad personnel in Mt. Morris, Leaf River, Oregon and Stillman Valley are entirely made up of volunteer personnel:

-Oregon Fire Protection District (FPD) -24 volunteers. VI (2), p. 315. -Oregon Ambulance Service - 20 volunteers. VI (2), p. 313. —) Guer--Mt. Morris FPD and Ambulance Squad - 28 part-time volunteers. VI (2), p. 337. -Leaf River FPD and Ambulance Squad - 28 part-time volunteers. VI (2), p. 328. -Stillman Valley FPD and Ambulance Squad -30 part-time volunteers. VI (2), p. 323. Davis Junction, Holcomb and Linwood Fire Protection Districts are entirely made up of volunteers. -Davis Junction FPD - 18 volunteers: Holcomb and Linwood FPD - 42 volunteers.

VI (2), p. 345.

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C. There are only nine full-time firemen in the entire EPZ and these are all located in Byron. These nine firemen make up only 26% (9 of 35) of the Byron Fire Protection Districts manpower. VI (2), p. 301.

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- D. Many part-time bus drivers have been volunteered for emergency work. Part-time bus drivers employed elsewhere will be difficult to contact in the event of an emergency (Affidavits of Swon, p. 5, Miller, p. 6, Turner, pp. 6-7, Maloney, p. 6, Bowes, p. 6, and Lamb, p. 4). Of the school districts:
 - -Oregon Community Unit (C.U.) #220 has 11 part-time bus drivers. VI (2), p. 309. -Mt. Morris C.U. #261 has 11 part-time bus drivers. VI (2), p. 339.
 - -Leaf River C.U. #270 has 10 part-time bus drivers. VI (2), p. 333. (Interview February, 1983).
 - -Meridian C.U. #223 has 29 part-time bus drivers. VI (2), p. 324. (Interview February, 1983).
 - -Byron C.U. #226 has 15 bus drivers, seven of which are teachers and available at school and eight of which are part-time. VI (2), p. 307.

Furthermore, many police personnel in the EP2 work on a part-time basis:

-The Mt. Morris Police Department employs 7 full-time and 12 part-time employees. VI (2), p. 343. -The Byron Police Department employs 8 fulltime and 14 part-time employees. VI (2), p. 303. 27

-The Oregon Police Department employs 5 fulltime and 4 part-time officers. VI (2), p. 317. -The Leaf River Police Department had no resource summary.

Generally, the IPRA-Byron, Revision O, fails to indicate the number of volunteer personnel who are necessary or available to perform the responsibilities assigned. The plans do not (1) assess the availability of volunteers during hours in which many are employed outsie the EPZ; (2) take into consideration inevitable personal conflicts in the responses of volunteers who have families in the EPZ; or (3) give consideration to the possibility that some volunteers who may perform well in non-nuclear disasters might refuse to participate in a nuclear disaster at the Byron Station.

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IESDA has failed to assemble data on: (1) the work location of volunteers and time needed for their response to emergency notification; (2) the number of volunteers with families in the EPZ; and (3) the number of volunteers who would refuse to respond at all to nuclear emergencies. This data as noted by the Atomic Safety and Licensing Board in <u>Zimmer</u>, Docket No. 50-358-06, June 21, 1982, would indicate the need to recruit additional personnel to provide adequate response on a 24-hour basis and give some assurances that assigned volunteers could and would in fact - respond when needed.

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- C. /re you familiar with the number of educational facilities situated within the plume exposure pathway of the emergency planning zone?
- A. Yes. The plume exposure pathway of the emergency planning zone includes 19 elementary, secondary, special education and college facilities.
- Q. Have you investigated the adequacy of evacuation plans for the schools referred to in the previous questions?
- A. Yes, I have.
- C. Has your investigation allowed you to make conclusions as to whether the respective school districts possess a sufficient number of buses for a timely and orderly transportation of their students from the schools to receiving sites during evacuation?

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A. Yes. The school districts possess no such resources. Ogle County Educational Services Assistant Superintenfent Charles Hayes provided me with a list of school hus resources in an interview on January 21, 1983. I have attached the list to this affidavit as Exhibit K. This list and subsequent discussions with School Superintendents David Turner (Mt. Morris Community Unit #261), J. Michael Maloney (Leaf River Community Unit #270), and David Miller (Meridian Community Unit #277) provided the following breakdown of student population and tus availability in the EPZ school districts:

School District	Number of Students	Available Fuses	Euses' Capacity
Oregon C.U. #220	1,237	11	625
Meridian C.U. #223	1,330	18	1,138
Byron C.U. #226	935	12	780
Mt. Morris C.U. #261	767	7	420
Leaf River C.U. #270	413	7	462
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Total	4,682	55	3,425

- C. How did school administrators respond to questions reparding the feasibility of an evacuation during bus transportation of children at the commencement or termination of the school day?
- A. (1.) School districts in the EPZ possess neither the capability nor the number of buses necessary to afford transportation for the evacuation of school children during such times of day. It has come to my attention that communication with school buses is insufficient or non-existent (affidavits of Miller, p. 5, and Maloney, pp. 5-6); and that multiple routes and trips will mean that the school population will be widely dispersed between those in transit and those located at each school site.

(2.) The Mt. Morris Community Unit #261, Meridian Community Unit #223 and Leaf River Community Unit #270 school districts do not maintain the capatility to promptly summon part-time bus drivers who are employed elsewhere 20

during the day (affidavits of Turner, Miller and Maloney). The school superintendents have also asserted in interviews and in their affidavits that many bus drivers will not be available for evacuation driving due to family conserns. They have further stated that the number of bus drivers willing to participate will decline with each successive trip (affidavits of Turner, pp. 6-7; Miller, p. 6; and and Maloney, p. 6).

26

(3.) School superintendents have clearly stated in interviews and affidavits that they have been denied an active role in energency planning. The superintendents do not consider evacuation plans for their facilities to be adequate or capable of implementation (affidavits of Turner, Miller and Maloney).

- O. That, according to IPRA-Byron, Revision C, will be the emergency response role of the Ogle County Superintendent of Educational Services?
- A. The IPRA-Byron, Revision C, states that the Cale County Superintendent of Educational Services shall coordinate and dispatch bus resources from outside the affected sector and from outside the EPR to schools and other populations within the EPR which require assistance. IPRA-Fyron, Revision C, VI (3), pp. 77-41 (Exhibit D); VI (2), p. 124; and a note at Section D in the Sheltoring Guide are attached to this affidavit as Exhibit L.

- C. In your investigation of the adequacy of the IFRA-Fyron, Revision C, have you made any findings relevant to thic facet of the plan?
- A. Yes, I wish to make known the following:

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(1.) Ogle County Superintendent of Educational Ferrity Rey Appler and his essistant, Charles Neges, stated to me on January 21, 1993, that their role had not been defined as of that date.

(2.) School superintendents of Mt. Morris Comprity "bit "261, Lean River Community Unit /270, and "orifien Community Unit #223, do not recognize the Sounty Superinterdent's puthority to carry cat responsibilities aroigned to hi- (13) in IIRA-Fyron, Revision C. JEEDA officials have get to clear up this matter (Interviews, February 1997). (3.) Shool districts do not poscess the communications equipment necessary for coordinating an evacuation of school students and described in Exhibit L. Energency direction from the Cale County Superintendent yould have to be carried out by commercial telephone lines subject to overload as the public is notified. (4.) Shool districts would be hard pressed to evacuate some sectors of the ETR even if mutual aid were to be rendered; e.g. Wind into the west or west/southwest requiring evacuation of Oregon and "t. Morris would necessitate the evacuation of 959 school children and ebout 400 institutionalized or transportation dependent persons more than the two school districts carrying careatty. (5.) Coordinating the bus resources will require additional Country time not accounted for in the CECO Evacuation Time Estimates- all Eyron.

(6.) The cooperation of school superintendents outside the EPZ is not certain. The Superintendent of Rochelle High School, 212, Dr. Melvin Smith, stated to me in a telephone conversation on February 4, 1983, that his district's buses would not be available for use in evacuating potentially contaminated areas. (Theodore Gapinski, Superintendent of Forrestville Community Unit #221, reported in a survey dated January 24, 1983, that he had not been contacted by county or state ECDA officials (1) regarding the Eyron Emergency Response Plan.) E = A + b + 2. (7.) The ability of school districts outside the EFZ to assist in the transportation of students or the general populace inside the EFZ is very limited:

(a.) The Superintendents of two Cale County districts outside the EPA have estimated long mobilization times.
Dr. James Egan of Kings Consolidated Community Unit in the first, stated in a survey returned January 24, 1983, that one to two hours would be required to mobilize personnel sufficient to man that district's available to survey returned January 24, 1983, Theodore Gapinski of Forrestville Community Unit #221, cited two hours as necessary for mobilization of drivers. (Exhibit 2.)
(b.) The availability of these bus drivers would depend on their willingness to enter a contaminated region (D) would one or more times.

(c.) The distances over which non-EPZ school buses must travel will limit their ability to offer timely assistance in the transport of EPZ school populations.

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- Q. Have provisions been made to evacuate those non-public schools without available transportation?
- A. The school facilities not incorporated as part of one particular school district do not possess sufficient vehicles for a timely and orderly evacuation.
 (1.) During the weeks of January 3rd and February 7th, 1983, I had two conversations with Jessie B. Hinkle, the Admin-istrative Director of the Oregon Day Care Center (ODCC),

I have collected the following information on that facility:

(a.) The ODCC has 42 students presently, but is licensed for and has previously utilized its capacity of 64. The center has seven staff members, of which three to four are working at any one time.
(b.) The ODCC owns no vehicles and has no plant which would give staff access to any bus services during an emergency. Staff vehicles, when available, are not sufficient to transport more than ten children.
(c.) The ODCC serves families from Oregon, Dixon and Nr. Morris. Parents are employed in many different areas around Cgle County. If parents' vehicles are to be used to transport students during an emergency, some 4C-60 vehicles will begin arriving at or near the day care center. The CDCC is located on the corner of Second Street and East Yashington Street (Route 64) several hundred feet from the only eastern passageway out of Oregon --- the Mashington Street bridge. (d.) There are no provisions in IFRA-Byron, Revision O, for the notification or evacuation of the ODCO.

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(2.) Through a number of conversations with Charles Lart, the Director of the Cole County Educational Cooperative, a a survey completed by Mr. Lamb, and the affidavit which he has submitted on the Emergency Preparedness contention, it is apparant that the Oregon Annex Figh School in Cregon and the Ogle County Trainable Center in Mt. Morris have very little hope of self evacuation (Lant affidavit). No tuses are owned by either facility. One contracted "3-" passenger van-tus is available during nost hours of the day for the transport of the contined student opplistion of 118 (If, p. 4). Butlic school vehicles vill not to evailable on a timely losin for either the fregen that or the Trainable Center. (If. p. (). Nor will roheve there offer safe transportation of profoundly handicapped students at the Trainable Center (14). (3.) The Lorado Taft Field Sampus cannot be evecuated in e timely or orderly manner. Through a February 8, 1987, interview with John Conforr, the facility manager, I deve Eathered the following information on the fersibility of an evacuation from that facility. The number of students at the Lorodo Taft Campus ranges from 90 to 150. There are often elementary school students who are transported to the campus by bus. The buses do not remain at the campus. :

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timely and orderly evacuation is further hindered by the fact that the only route to the campus is also the only exit for over 100 recreational vehicles and many more day visitors who frequent Lowden State Park during the summertime.

(4.) Through a survey and interviews (February 9th and 17th, 1983) with Robert Glaser, director of the Village of Progress Inc., I have ascertained the following information on that facility's ability to self-evacuate. The Village of Progress has about 100 students at the present time. The facility presently contracts with KAL Buslines, Inc., for two buses, one of which is available at the facility during the day.

- Q. Have you investigated the availability of emergency medical facilities with trained staff, equipment, and written protocols for responding to a radiological emergency at the Byron site?
- A. Yes, I have. With input from Radiologist Dr. Celow Edwards and Dr. John Hansen of Rockford, I adapted New York Public Interest Research Center ("NYFIRC") Radiological Emergency Response Survey (developed by James L. Murphy MPH and Joan E. Harriss MPH) to address the hospitals in the nine county Regional Health Service Area of Northwestern Illinois. While the specifics of the survey were developed by those in the Medical and public health professions, the parameters of the survey were determined by NUREG 0654 II (L and O) which address the level of preparedness (in terms of equipment, training

31

of personnel and pre-established protocols) required of medical support facilities surrounding nuclear stations. I also hoped to determine from the survey the extent to which CECo and IESDA planners had assisted the hospitals surrounding the Byron Station in developing a comprehensive regional response plan. A copy of the survey is attached to this affidavit as Exhibit M. The survey was described by Dr. David Jeblonowski, ER Physician at St. Anthony Hospital in Rockford as "thorough" and "a real eye-opener."

Hospitals were generally uncooperative. In mid-December, I sent surveys to all 15 hospitals in Illinois Region One which includes all hospitals within 30 miles and some as far as 70 miles distant. Throughout January I made follow-up phone calls, mailings and carried on a lengthly campaign to convince the Illinois Hospital Association (IHA) Survey Committee to approve the survey. The IHA, however, recommended that the survey <u>not</u> be completed because Mitigation involving the hospitals could ensue. Despite this I received four completed surveys: from Rochelle Community Hospital in Rochelle, Highland Hospital in Belvidere, Sandwich Community Hospital in Sandwich, and Savanna City Hospital in Savanna. The tabulated results of these surveys are presented in a table attached to this affidavit as Exhibit.N.

of the respondents to my survey: ---no hospital had staff training in the treatment of radiation injury and the decontamination of 32

patients (though one nurse at hospital #2 had had 3 hours of hazardous materials training in an EMT course). ---

---self evaluations of staff preparedness to manage a major radiological disaster (more than 5 victims) were "1" "3" and 2 "0's".

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---no hospital reported having a decontamination table, decontamination showers or lead containers for disposal of contaminated articles and only one has an isolation room.

---only two of the four has a radiation survey instrument.

---three have written protocols for decontamination procedures but none could claim to have practiced the procedures.

---one of the four has a protocol for dealing with a major radiological disaster (5 or more victims) but the plans have never been tested.

---self evaluations for facility preparedness for such a disaster (0-10 scale) was two "0's" and two "2's."

---none of the hospitals has ever been contacted by anyone from IESDA regarding the Eyron Emergency Response Plans and none are aware of any efforts to assign a support role to their facilities.

While these respondents are approximately equal in size and possibley representative of the 12 smaller Region One hospitals, the three Rockford Hospitals have received special attention. Throughout December, 1982, and
January, 1983, I made attempts to obtain information concerning the preparedness of these three hospitals via survey and interviews. Dr. Jeblonowski, Head Emergency Room physician at St. Anthony Hospital had completed the survey when administrator Robert Flodin intervened. Likewise, Dr. Keene at Rockford Memorial Hospital ("RMH") was essentially cooperative and discussed decontamination capabilities of that facility with me during the week of January 3. Administrator William Dilts, however, did not see my inquiries regarding Radiological response capabilities as "any of (my) business." RMH is the support medical facility designated by CECo for the Byron Station. (GSEF Byron Annex BYA 4-4). The present state of RMH preparedness is highly relevent since both Dr. Keene and William Dilts indicated to me that there would be no enhancement of the RMH emergency facilities as a result of the letter of agreement with CECo.

- Q. Have you investigated the availability of equipment and vehicles for transporting victims of a radiological accident to medical support facilities?
- A. Yes, I have.
- Q. Please describe how this investigation was carried out.
- A. Again, I adapted a NYPIRC survey to specifically address Ambulance medical services in the area surrounding the Byron Station. A copy of this survey is included with "Results of the Radiological Emergency Response Survey: Ambulance Medical Services" prepared by Comprehensive Health Planning of Northwest Illinois ("CHIPNI") which is

attached to the affidavit of Joel Cowen, Executive Director as Exhibit B. I surveyed ambulance services in the 9 counties of Northwestern Illinois since the Byron Station is just 7 miles from the center point of the region. I obtained a comprehensive list of 72 ambulance services from Roy Leslie, Emergency Medical Services Coordinator for Region 1 and mailed or hand delivered a copy of the survey to all 72 between December 20 and December 22, 1982. Follow-up phone calls and visits were made during the weeks of January 3 and January 10 to encourage response. Roy Leslie received more than 20 calls from ambulance services about the survey and he, too, encouraged them to respond since he considered it to be a good exercise.

In order to assure a timely collation of survey results, the study was terminated on January 31 and all raw questionaairs were given to Joel Cowen, Executive Director of CHPNI.

- Q. What information did you obtain from the survey regarding the availability of equipment and vehicles for transporting victims of radiological accidents to medical support facilities?
- A. "Results of the Radiological Emergency Response Survey: Ambulance Medical Services" thoroughly evaluated these criteria from NUREG 0654 Chapter II, Section L. I refer to Cowen affidavit Exhibit B question 16 on page 9, questions 21-23 on page 10, and notes 8 and 9 on page 11. The only EPZ ambulance service which did not respond to

the survey was the Byron FPD. I acked Byron Fire Chief Steve Walters on February 4 if his ambulances would be used to transport contaminated individuals to a supporting hospital. He responded that he didn't know. "That hasn't been worked out yet." The Byron Fire Protection District is named in the Byron Annex to the CECo GSEP as providing ambulance services for the Byron Station. (BYA 4-4) as is required by NUREG 0654 Chapter II, Section B.9. According to IPRA-Byron, Revision 0, the Byron Fire Protection District doesn't have any radiation survey instruments or protective equipment. IPRA-Byron, Revision 0, Chapt. 2, p. 301, Byron Fire Protection District Resource Summary is attached to this affidavit as Exhibit 0.

- Q. Did the survey address any other areas regarding the preparedness of ambulance services to respond to a radiological emergency?
- A. Yes. Among other things, the survey results provide data showing the inadequacy of training for ambulance Corps members pursusant to NUREG 0654, Chapt. 2, Section 0 and L. I refer to Cowen affidavit Exhibit B, questions 5-9 on pp. 6-7 and notes 1-5 on pp. 11-12.

The survey results indicate the almost total absence of protocols for responding to a radiological accident and no clearly defined roles for ambulance services, pursuant to NUREG 0654, Chapt. 2, Sections A and L. I refer here to Cowen affidavit Exhibit B, questions 14-19 on pp. 8-9. According to IPRA, Volume 1, Chapt. 10 and IPRA-Byron, Revision 0, Chapt. 2, Section M, training is to be provided for personnel involved in emergency response functions. According to IPRA-Byron, Revision 0 "Specific training for emergency workers is performed on a continual basis during the planning process at municipalities in the EPZ of each nuclear power plant site in Illinois." The page of IPRA-Byron, Revision 0, devoted to 'Training Consideration' (VI (2), p. 381) attached to this affidavit as Exhibit P. This is clearly an excerpt from Volume I of IPRA which has yet to be implemented in the Byron EPZ with regards to the ambulance services and the fire department rescue squads which responded to the survey.

- Q. According to the IPRA-Byron, Revision O, how will primary response organizations be notified?
- A. Once the Ogle County Sheriffs Telecommunicator is notified via Nuclear Accident Reporting System ("NARS") the dependence on commercial telephones and radio begins. Both systems are subject to overload. Carl Swon, Oregon Ambulance Service Educatio al Director and employed for 20 years in telephone communication, expressed his opinion that the Fireband Frequency is likely to overload during an emergency evacuation. (Swon affidavit at 4). This frequency is used by every fire protection district and ambulance service (except Byron) in the EPZ.

The IPRA-Byron, Revision O 'Communications Network Summary' VI (2) pages 277, 279, 281, 283 are attached to this affidavit as Exhibit Q. There are no provisions made for the notification of Winnebago County officials and such officials are not included in the 'Radio Communications Network Summary' (Exhibit Q).

Emergency notifications and communications with local municipalities will be through commercial telephone (VI (2), p. 9). All emergency communications to be carried out by the Ogle County Superintendent of Educational Services must be by commercial telephone lines. The Ogle County Superintendent has an on going role in coordinating transportation resources which is dependent on the integrity of the local phone lines for hours after the public is notified that a radiological accident has occured.

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- Q. According to IPRA-Byron, Revision O, what communications systems will be relied upon for mobilizing and maintaining communications with emergency response personnel in the event of an accident at the Byron Station requiring their services for the implementation of protective actions?
- A. The IPRA-Byron, Revison 0, states that communications between school superintendents and field personnel will be maintained by telephone or radio. Commercial phone lines will be the only means by which school superintendents Miller (Meridian C.U. #223), Turner (Mt. Morris C.U. #281) and Maloney (Leaf River C.U. #270) can notify bus drivers that they are needed for evacuation driving. (Affidavits of Miller, Turner and Maloney).

It is suggested at VI (2), p. 87 and 207 that school superintendents David Miller and Michael Maloney use their telephone or radio to communicate with their field personnel during emergency operations. Neither Mr. Miller nor Mr. Maloney have radios with which to communicate with his bus drivers (Miller affidavit, p. 5; Maloney affidavit, p. 5). Superintendent Turner of Mt. Morris C.U. Thas radios for his buses but he is instructed (IFRA-Byron, Revision O VI (2), p. 223)Tleave his base station and report to the Mt. Morris EOC.

According to the 'Byron Superintendent of Schools Resource Summary', Superintendent Bill Brown has three C.B. radios with which to communicate with his 15 buses. VI (2), p. 307.

Continental Telephone representative Charles Strand indicated to me in a February 7 phone conversation that phone equipment is engineered for average daily use. Use of capital outlays is an efficient 'upper nineties.' The IPRA-Byron, Revision 0, has no contingency plans in the event of an overload of telephone lines.

- Q. Are there guidelines for radiological emergency response plans in NUREG 0654 which concern planning outside of the EPZ?
- A. Yes. Protective measures to be used for the ingestion pathway are described, as are guidelines for the siting and organization of host facilities. NUREG 0654 also recognizes (persuant to planning bases in 0396) that one out of the four primary reasons for selecting a lo-mile radius EPZ was that 'detailed planning within lo miles would provide a substantial base for expansion of response efforts in the event that this proved

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necessary.' (p. 12, NUREG 0654, FEMA Rep. 1, Rev. 1). The debate over the size of the EPZ continues and I have attached a brief summary of existing argument for extending the EPZ as Exhibit R. NUREG 0654 clearly states that for the most serious accidents, protective actions would need to be taken outside the planning zones. <u>Id</u> p. 11. NUREG 0654, pp. 11-12 are attached as Exhibit S.

- Q. In the event that protective actions (evacuation, sheltering, control of access and regress, radio-protective drugs) became necessary beyond the EPZ, would plans in place within 10 miles provide a base for the expansion of response efforts?
- A. No, because:

1. Notification procedures outlined in BYA 4-5 cannot be expanded to provide for the prompt notification of the public beyond the 10-mile EPZ. The applicant relies on permanently installed sirens and a mobile public address system. No such sirens exist outside the EPZ. The applicant's alternative system of mobile public address systems is impractical for larger populations in Rockford, Freeport, Dixon, Sterling and Rochelle; no plans are in place to notify the more sparsely populated rural areas.

2. The applicant has developed no evacuation time estimates for areas outside the lOmile EPZ for use by those responsible for choosing protective actions.

3. To the northeast and within the first 10-mile

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incremental expansion of the planning base is most of the city of Rockford, Illinois. The Rockford area has a total population of about 204,000. Taking the population distribution by campus sector, we find that the Sector C (221° with a northeast centerline) population within the first 10 miles stands at 1,577, while a second 10 miles adds 114,598 persons. This is an increase in population by a factor of 72.7.

Similarly, Sector G (southeast) has 261 persons within 10 miles, and jumps to 11,528 within only an additional 10 miles. This is a 44-fold increase.

There is a clear change from rural to urban areas. Besides huge numerical increases, additional problems are caused by high density urban areas (e.g., traffic, heavy industry which must be shut down, people dependent upon public transportation). Southwest Rockford is characterized by all of these factors.

4. No plans have been made for the relocation of persons outside the EPZ. Wisconsin Division of Emergency Government Deputy Administrator Gordon Reece has confirmed that no plans have been made to relocate Rockford residents in Wisconsin.

5. Finally, the public outside the EPZ would be totally uninformed as to the actions to be taken (e.g., sheltering, evacuation) in order to protect themselves from radioactive effluents.

The emergency plans proposed by the state and the applicant for the 10-mile EPZ fail to 'provide a sub-

stantial base for expansion of responsible efforts in the event that this proved necessary' (NUREG 0654, p. 12).

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Although Commonwealth Edison responded to a DAARE/ SAFE interrogatory as follows: "if evacuation or any other protective measures became necessary beyond 10 miles, they would be implemented as an extension of the measures planned for within the 10-mile area," such an expansion is not feasible by present planning.

- Q. Are you familiar with CECo's "Evacuation Time Estimates for the Plume Exposure Pathway Emergency Planning Zone of the Byron Nuclear Generating Station" dated December, 1982, ("Evacuation Time Estimates - Byron")?
- A. Yes, I am.

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- Q. Have you read and studied the relevent regulations and guides for the preparation and evaluation of Evacuation Time Estimates?
- A. Yes. I have read interalia lOCFR, Sections 50.34; 50.47; 50.57 and NUREG 0654, FEMA-Rep. 1, Rev. 1. I have read and studied 10 CFR, Section 50.47 (b) (10) and NUREG 0654, II. J. 8; II. J. 10 (i), (m), and Appendix 4.
- Q. Has Evacuation Time Estimates Byron been prepared in accordance with these regulations?
- A. Certainly not. Evacuation Time Estimates Byron fails to comply with NUREG 0654, Apprendix 4 because:
 - The study does not translate population data into two subgroups: those using autos and those without autos (NUREG 0654, Appendix 4, II-A, p. 4-2).
 - 2. The study does not give special attention to those households not having automobiles (<u>Id</u> II-A, p. 4-3). Vehicle data was derived from demographic data and the number of vehicles registered in Ogle and Winnebago Counties. (Evacuation Time Estimates - Byron, p. 3-1) Each household is then assumed to represent one vehicle because there are, numerically, enough to go around. (Id)

3. The study does not develope accurate estimates of transient populations using local data such as peak tourist volumes and employment data of large factories (NUREG 0654, Appendix 4, II-B. p. 4-3). The study misrepresents normal and seaschal transient populations. Table 3-4 "Camps and Recreation Areas Within the Emergency Planning Zone" is attached to this Affidavit as Exhibit T. Numerous phone interviews and personal interviews with owners and representatives of camps and recreational areas conducted between December, 1982, and February, 1983. letters received from said spokespersons during February, 1983, and examination of the FSAR and a Department of Commerce and Community Affairs publication titled "Rock River Valley," dated June, 1982, have led me to conclude that the data presented in Table 3-4 is far from accurate. Table 3-4x summarizes the data collected during my investigation of this issue. Table 3-4x is attached to this Affidavit as ExhibitU . Should an emergency occur on a summer weekend, decision makers using CECo time estimates would be overlooking 450 night time campers at Lowden State Park, almost 800 at Lake Louise and as many as 1,100 at Lake LaDonna. During a holiday weekend up to 2,300 more persons would enter the roadway system at Lake LaDonna than CECo planners would have us believe.

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4. The study does not indicate the critical assumptions which underlie the time estimates, e.g., peak transient versus off-peak transient (NUREG 0654, Appendix 4, IV-A, p. 4-7).

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 The study does not address the relative significance of alternative assumptions (Id, IV-A, p. 4-7).

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- 6. The study does not make evacuation time estimates for each special facility on an individual basis (<u>Id</u>, II-C, p. 4-3; IV-B, p. 4-10). The Village of Progress and the Oregon Day Care Center are listed in Table 3-2 as schools. (Table 3-2 is attached as Exhibit V.) Schools are designated in Section 4.2 of the Evacuation Time Estimates -Byron as special facilities. (Section 4.2 is attached as Exhibit V.) But evacuation time estimates were not calculated for Village of Progress and the Oregon Day Care Center. (Table 6-2 "Special Facilities Evacuation Time Estimates" is attached as Exhibit X.)
- 7. The study does not describe special facilities' highly individualized means of transportation (NUREG 0654, II-C, p. 4-3). The differing transportation capabilities of the Oregon Annex School, The Ogle County Trainable Center, The Lorado Taft Field Campus, White Pines Manor Nursing Home, and Pinecrest Manor Home for the Aging are well documented in the Affidavits of Thomas Bowes, (pp. 2-5), Gary Montel, (pp. 4-6).

and Charles Lamb, (pp. 3-5, 7-9). The public schools, too, have varying transportation capabilities to which the time estimates are insensitive. The insensitivity is both general (all districts have mobilization and transportation problems according to Affianta Miller, Turner and Maloney) and specific (the Oregon Superintendent of Schools can transport less than half his student population in one trip as explained in this testimony at p.25).

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 The study does not consider the special facilities' highly individualized mobilization times for equipment and manpower (NUREG 0654, Appendix 4, IV-B, p. 4-9).

- a) Ogle County Jail inmates are, according to the IPRA-Byron, Revision 0, to wait for non-BPZ holding center vehicles to drive to Oregon to pick them up, yet their evacuation time is the same for Oregon Bible College students who can simply get into private vehicles and leave. (Table 6-2, Exhibit 1.)
- b) Strangely enough, the Oregon Annex School and the White Pines Manor Nursing Home are able to mobilize vehicles and evacuate (54 minutes) before their source of transportation, the Oregon School District, is able to complete its evacuation (55 minutes).

c) The statement in Section 4.2 (Exhibit W) that "The individual mobilization time estimates for each special facility have been combined with the travel time out of the plume exposure pathway EPZ to calculate the total special facilities evacuation time (sic)" is (pure nonsense (p. 4-7). No individual mobilization times have been calculated. If the special facilities are arranged in order of the distance required to travel out of the EPZ, the total evacuation times line up accordingly. Mobilization times are a constant, not a variable, factor in the Evacuation Time Estimates.

9. The study does not use time of day considerations for special facilities: (NUREG 0654, IV-B, p. 4-10)

- a) White Pines Nursing Home has 15 staff
 on duty during the day and three at
 night. (Bowes Affidavit, pp. 5-6)
- b) Pinecrest Manor has 40 staff on duty during the day but as few as three or four at night. (Montel Affidavit,

pp. 6-7)

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Time of day is clearly a variable to be considered in determining evacuation times.

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10. The study does not use area specific weather characteristics (NUREG 0654, Appendix 4, IV-A, pp. 4-6, 4-7).

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It is assumed in the Evacuation Time Estimates that there will be a 30% reduction in roadway capacity during adverse weather (p. 4-5).

This assumption is based on Hwy. Research Record No. 321 (1970) titled "The Environmental Influence of Rain on Freeway Capacity." Rain is not the major impediment to roadway travel in northern Illinois and there are no freeways in Ogle County. A snow or ice covered county road would have been a more appropriate case for study.

Allow me to quote the FSAR on this, "Severe winter storms, those that produce snowfall in excess of six inches and often are accompanied by damaging glaze, are responsible for more damage in Illinois than any other form of severe weather." (FSAR at 2.3.1.2.3.) These storms occur five times per year in the state and average 14.2 hours in length. <u>Id</u>. The northwestern area of Illinois, including the Byron Station, has the highest frequency in the state (144 storms over six inches in the last 60 years). <u>Id</u>. The life of the plant then, may see over 70 such storms in addition to the two days glaze per year in Ogle County. <u>Id</u>

Bad weather has other effects on Evacuation Time Estimates including:

- a) the number of accidents increases
 dramatically thus slowing traffic;
- b) snow removal duties will reduce the Ogle County Highway Department's and the State Highway Department's ability to perform other tasks vital to prompt evacuation, viz., notification of the public, access and traffic control (IPRA-Byron, Revision 0, VI (1)p. 27; VI (2) p. 120); and
- other emergency workers will be delayed in getting to their posts.

11. The study does not identify the adverse weather frequency used. (Id, IV-A, p. 4-6)

12. The study does not present each of the evacuation time components alone, with the total evacuation time (NUREG 0654, Appendix 4, IV-A, p. 4-6) in a format as exhibited in Table 2 (Id, 4-16).

A table of this nature would have forced the Evacuation Time Estimates - Byron authors to recognize other inadequacies of the document 47

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presented herein.

- 13. The study does not give consideration to the impact of peak populations including behavioral aspects (Id, IV-B, p. 4-10).
- 14. The study does not make recommendations for actions that could be taken to significantly improve evacuation times. (Id, IV-B, p. 4-10) The study mentions the deployment of traffic control (p. 7-2) but this is hardly innovative.
- 15. The study does not include comments resulting from a review of the draft by principal organizations (state and local). (NUREG 0654, Appendix 4, IV-B, p. 4-10)
- Q. Are there further inadequacies in the Evacuation Time Estimates which are not related to specific portions of NUREG 0654, Appendix 4, but which still threaten the document's credibility and reliability as a tool for decision makers during a radiological emergency?
- A. Yes, there are.
 - Evacuation Time Estimates Byron makes the following assumptions which are not supportable: (Section 4.1.3 which contains the assumptions, is attached to this Affidavit as ExhibitY.)
 - a) "All persons within the plume exposure pathway EPZ when instructed to evacuate, will leave." (p. 4-4)
 - b) "People in the outer primary evacuation zones will not evacuate when an inner primary evacuation zone is the only

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zone to be evacuated." (p. 4-5)
c) "Traffic rules and controls will be
obeyed, only the proper travel lane
will be used (not shoulders or opposite
flow lanes)..." (p. 4-5)

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Assumptions 1, 2 and 3 run contrary to expected human behavior and common sense. The plan should consider the relative significance of alternative assumptions (NUREG 0654, IV-A, p. 4-7).

"The prompt public notification system, which utilizes sirens, will be used. (Based on this system, the time to notify essentially 100% of the full plume exposure pathway EPZ population ("" has been estimated to be 15 minutes)." (p. 4-5)

On the contrary, according to state plans, "Provisions exist to warn 100% of the population within the entire plume exposure EPZ within a 45 minute time period." (IPRA, Volume I, Ch. 5; IPRA, Volume VI, Ch. 2, p. 10)

 e) "The people without cars will receive rides from either neighbors or designated public service vehicles." (p. 4-5)

As discussed in this testimony, no adequate plans exist for the use of public service vehicles in transporting

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homebound residents or those without a vehicle at home. Relying on neighbors is a more realistic assumption but it is an assumption far ahead of public consciousness.

 Adequate transportation will be available for summer camps."

Summer camps are only listed in the IPRA-Byron, Revision O. No provisions have been made for their transportation. Ruth Little, Executive Director of the Rock River Valley Council of Girl Scouts, reported to me on January 13, 1983, that Camp McCormick, located in the EPZ, has about two cars for 90 campers.

2. The Evacuation Time Estimates - Byron falsely claim to have obtained mobilization and loading times for special facilities from administrators of those facilities (Exhibit W). IESDA officials are purported to have obtained a 30 minute mobilization time (time required to obtain transportation and prepare to leave) from school officials. Affidavits of school officials Maloney (p. 9), Miller (p. 9), Turner (p. 9-10), and Lamb (p. 8) all deny this. Nursing homes were assigned the same mobilization times. Affidavits of Montel (p. 8-9) and Bowes (p. 8) aggressively deny the adequacy of these estimates

RADIOLOGICAL EMERGENCY RESPONSE SURVEY AMBULANCE MEDICAL SERVICES

1. H

How many people are active members of your Ambulance Corps at this time?

Employed	Region	EPZ	30-Mile Radius
0-10	6	1	5
11-20	11	1	5
21-30	13	2	11
31-40	0		3
41+	. 3		
Mean	23.0	19.5	24.7
Median	19.0	19.0	24.0
Total	760	78	593

2. How many of these people are Emergency Medical Technicians (EMTs)?

EMTs	Region	EPZ	30-Mile Radius
0- 5	4	0	4
6-10	13	3	10
11-15	10	1	6
16-20	4	0	3
21+	2	0	1
Mean	11.7	10.0	11.0
Median	10.0	10.0	10.0
Total	387	40	265
Z EMTs	50.9%	51.3%	44.7%

3. How many ambulances does your Ambulance Corps operate?

No. Ambulances	Region	EPZ	30-Mile Radius
1	12	1	9
2	19	3	13
3	1		1
4	1		1
Mean	1.7	1.8	1.8
Median	2.0	2.0	2.0
Total Ambular	nces 57	7	42

4.

Is your Ambulance Corps part of the Police or Fire Department in your area?

	Reg	ion	E	PZ	30-M Rad	ile
Response	No.	ž	No.	2	No.	<u>z</u>
Yes	24	72.7%	3	75.0%	20	83.3%
No	9	27.3%	1	25.0%	4	16.7%

5. Have you or your Corps had in-service training on emergency response to ionizing radiation injury and/or decontamination procedures in the past five years?

	Reg	ion	E	PZ	30M Rad	ile ius
Response	No.	<u>x</u>	No.	<u>×</u>	No.	<u>%</u>
Yes	9	27.3%	10	25.0%	Ð	25.0%
No	23	69.7%	3	75.0%	18	75.0%
No Response	1	3.0%	0	0.0%	0	0.0%

6.

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Have you or your Corps had any other training pertinent to an emergency response to above?

	Reg	ion	E	PZ	30-M Rad	ile ius
Response	No.	<u>*</u>	No.	<u>z</u>	No.	<u>%</u>
Yes	3	9.1%	0	0.0%	3	12.5%
No	26	78.8%	3	75.0%	19	79.2%
Don't Know	2	6.1%	1	25.0%	1	4.2%
No Response	2	6.1%	0	0.0%	1	4.2%

7. How many Corps members are competent in the evaluation of exposure levels? 30-Mile Region EPZ Radius No. Z No. Z No. Z Some

	Reg	ion	1	EPZ	30-Mile Radius	
lesponse	No.	2	No.	2	No.	2
Some	5	15.2%	0	0.0%	43	16.7%
None	26	78.8%	4	100.0%	18	75.0%
Don't Know	1	3.0%	0	0.0%	1	4.2%
No Response	1	3.0%	0	0.0%	1	4.2%
# Competent	19		0		18	
% Competent		2.5%		0.0%	11	3.0%

8. How many Corps members are competent in the evaluation of decontamination and treatment of individuals exposed to ionizing radiation?

	Region			EPZ	30-Mile Radius		
Response	No.	2	No.	<u>z</u>	No.	2	
Some	7	21.2%	0	0.02	43	16.7%	
None	24	72.7%	4	100.0%	18	75.0%	
No Response	2	6.1%	0	0.02	2	8.32	
# Competent	33		0		22		
% Competent		4.3%		0.0%		3.7%	



9. How prepared are your Ambulance Corps members to respond to a major radiological disaster?



Ranking	Region	EPZ	Rad	dius			
0	21	3	10	6			
1	2	1		1			
2	4	0		3			
3	2	0		1			
4	1	0		1			
5	0	0	(C			
6	0	0		0			
7	* 1	0		2			
8	1	0	1	1			
9	0	0	(C			
10	0	0	(C			
Total	32	4	24	4			
No Respon	ise l						
Mean	1.1	0.3	1.3	2			
Median	0.0	0.0	0.0	D			
Rank	Description	No.	<u>×</u>	No.	<u>*</u>	No.	<u>*</u>
(0)	not at all	21	65.6%	3_	75.0%	16	66.7%
(1-4)	not well prepared	9	28.1%	je j	25.0%	65	25.0%
(5-8)	generally prepare	d 2	6.3%	0	0.0%	25	8.3%
(9 & 10)	well prepared	0	0.0%	0	0.0%	0	0.0%
Total		32	100.0%	4	100.0%	24	100.0%
No Respon	ise	1					

10. To what hospital would you take patients who have been injured in a radiological emergency?

Hospital	Region	EPZ	30-Mile Radius
Rockford Memorial	20	1	2
St. Anthony	6	1	6
Nearest Rockfor Hospital	2	0	2
Sterling Community General	6	0	2
Rochelle Community	1	0	1
Freeport Memorial	4	0	1
Kishwaukee Community	3	0	3
Sandwich Community	1	0	0
Galena Stauss	1	0	0
Dixon KSB	2	0	2
Don't Know	1	1	1
No Response	4	1	4
Total	33	4	24
% Correct (RMH)	6.12	25.0%	8.3%

11. What is the distance from the farthest point in your area to this hospital?

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In open

× + ;

	Region			EPZ		30- Ra	Mile dius	
Dista Mean	Max.	Miles Min.	Dista <u>Mean</u>	Max.	Miles Min.	Dista Mean	nce in Max.	Miles Min.
24.5	55	2	35.0	45	25	23.9	55	2

12. What is the maximum number of trauma or medical patients that your Ambulance Corps can transport at one time?

Region			EFZ Radius								
Patients	Mean	Max.	Min.	Patients	Mean	Max.	Min.	Total Patients	Mean	Max.	Min.
109	3.3	8	1	18	4.5	8	2	82	3.4	8	1

13. What is the maximum number of non-ambulatory people that your Ambulance Corps can transport at one time?

	Regi	on			EPZ			30 F)-Mile Ladius		
Total People	Mean	Max.	Min.	Total People	Mean	Max.	Min.	Total People	Mean	Max.	Min.
163	5.1	16	2	25	6.3	12	4	143	6.2	16	2

14. Does your Ambulance Corps have a written protocol for radiological emergency procedures?

	Re	gion	1.1	EPZ	Rad	ile lius
Response	No.	2	No.	<u>z</u>	No.	2
Yes	2	6.0%	0	0.0%	20	8.3%
No	31	93.9%	4	100.0%	22	91.7%
Total	33	100.0%	4	100.0%	24	100.0%

15. Do you have a written protocol for an emergency response to accidents involving other injuries as well as radiation exposure?

......

					20-5	lile
	Re	gion	1	EPZ	Rac	ius
Response	No.	<u>z</u>	No.	<u>z</u>	No.	z
Yes	4	12.9%	1	20.0%	4	17.4%
No	27	87.1%	4	80.0%	19	82.6%
Total	31	100.0%	5	100.0%	23	100.0%
No. Response	2		0		1	

16. Do you have a written protocol for the transportation of patients contaminated in a radiological emergency?

	Reg	gion	E	PZ	Rad	lius
Response	No.	<u>×</u>	No.	<u>z</u>	No.	<u>z</u>
Yes	3	9.1%	10	25.0%	Ð	12.5%
No	30	90.9%	3	75.0%	21	87.5%
Total	33	100.0%	4	100.0%	24	100.0%

17. Do you have a written protocol for the evacuation of people dependent on others for mobility during a radiological emergency?

	Reg	gion	1	EPZ	Rac	lius
Response	No.	<u>%</u>	No.	<u>×</u>	No.	<u>%</u>
Yes	1	3.2%	0	0.0%	1	4.5%
No	30	96.8%	4	100.0%	21	95.5%
Total	31	100.0%	4	100.0%	22	100.0%
Don't Know	2		0		2	

18. Has your Ambulance Corps ever been contacted by anyone from ESDA regarding the Byron emergency response plan?

	Re	gion		EPZ	Rad	dius
Response	No.	*	No.	<u>×</u>	No.	2
Yes	8	28.6%	30	0100.0%	70	D 35.0%
No	20	71.4%	0	0.0%	13	65.0%
Total	28	100.0%	3	100.0%	20	100.0%
Don't Know	5		1		4	

1 4 19 Are you aware of any efforts to assign a support role to your ambulance which service as a part of an integrated response to a radiological emergency?

20 4410

	Re	gion		EPZ	30-1 Rac	dile dius
Response	No.	<u>z</u>	No.	2	No.	<u>z</u>
Yes	1	3.4%	0	0.02	1	4.5%
No	28	96.6%	2	100.0%	21	95.5%
Total	29	100.0%	2	100.0%	22	100.0%
Don't Know	4		2		2	

- 9 -

....

20. How many of your Ambulance Corps members would respond to an emergency resulting from a radiological release from the Byron nuclear facility?

	Region			EPZ			30-Mil Radiu	e
Members Responding	Avg.	Z Responding	Members Responding	Avg.	% Responding	Members Responding	Avg.	% Respondir
180	7.5	23.7%	58	14.5	74.4%	122	5.8	2).6%

No Response: Region (8), EPZ (1), 30-mile radius (7). [Considered to be members responding]

Do you have any disaster cabinets containing the supplies necessary for 21. treatment and decontamination in the event of a radiological emergency?

	Reg	gion	1	EPZ	30-N Rac	file fius
Response	No.	2	No.	<u>×</u>	No.	<u>%</u>
Yes	1	3.0%	0	0.0%	1	4.2%
No	32	97.0%	4	100.0%	23	95.8%
Total	33	100.0%	4	100.0%	24	100.0%

22. Number of Ambulance Corps with protective equipment available for a radiological emergency.

Type of Equipment	Equi Availab or Pa	pment ble Totally artially	No Avai	t lable	Don't No Re	Know/
	No.	<u>z</u>	No.	2	No.	*
Gloves	6	18.2%	17	51.5%	10	30.32
Gowns	1	3.0%	23	69.7%	9	27.3%
Masks	3	9.1%	21	63.6%	9	27.3%
Shoe Coverings	1	3.0%	23	69.7%	9	27.3%
Head Coverings	1	3.0%	23	69.7%	9	27.3%
Personal Dosimeters	2	6.1%	22	66.7%	9	27.3%
as waste containers	s 1	3.0%	24	72.7%	8	24.2%
Blankets	11	33.3%	10	30.3%	12	36.4%

23. Does your Ambulance Corps have any radiation survey instruments?

	Reg	ion	- 1	EPZ	Rad	dius
Response	No.	ž	No.	<u>z</u>	No.	2
Yes	6	18.2%	0	0.0%	5	20.8%
No	27	81.8%	4	100.0%	19	79.2%
Total	33	100.0%	4	100.0%	24	100.0%

2/14/83 Respons 11 \$ 24

- 10 -

APPENDIX 2

SUMMARY OF RESPONSES BY AMBULANCE SERVICES

$ \begin{array}{c} \text{(HAL, QISTING ADOTANTICOP} \\ \hline \text{(HAL, QUSTING ADOTANTICOP} \\ \hline (HAL, QUSTING ADOTANTIC$	GENERAL QUES 1. Row many of your 2. Now many Nedical Nedical 4. 1s your Police WORKER PREP	STIONS ABOUT AMBULANCE CORPS												-	1																1	ł.
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We want of these pools are face of a billion of the pool are face of a billion of a billion of a bill	2. Nov many Nedical Nov many Corps of Corps of Colice VolkER PREP	Ambulance Corps at this time?	19 2	5	0 2	1 27	17	27	10	25	01	-	\$ 25	•	11	001	14	12		6 36	30	14	28	=	-	23	-	27	5		9 23	
0. Note wanty amblingtores does yout (a prime) 0. 1 1 1 2 2 2 2 2 2 1 2 1 2 1 2 1 2 1 2	J. How many Corps of . Is your Police WORKER PREP	y of these people are factgency Techinciana?	-	4	0	* .	=	61	2	-	10		1 20	4	01	E	14	12	\$	8		14	*	-	-	10	13	27		0	5	
• University for an intervent of the first of the fir	4. 1s your Police o WORKER PREP	y ambulances does your Ambulance					•	•	•	•			,	•									1				•					
When Furthernolicity integration of any off of the part (iter yard) When You of You of You for You of You for You of	WORKER PREP	prester ambulance Corps part of the or Fire Department in your area?	* *		- z		¥	*					* *	z	* *	* *	3 Z	N Z						* *		* *	* *					
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<pre>relation flugty and/or decontaination the part in part in part in the part in the</pre>	5. Have yo	u or your Corps had is-service																														
0. Proceedure to the function matrix in the first of the first	radiati	on injury and/or decontamination	,	,			1	1			,	,		1	4	3	3		;				3	1	,	3	1	,		٠,		
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	b. Have you	tes in the past five years? u or your Corps had any other				2	*	-	z	z	-		z	-	z	-	z	4	z	-			E	E	-	z	•	-	ĸ			
7. How wanty Corporements are completent 0 <td>trainin</td> <td>g pertinent to an emergency</td> <td>2</td> <td>2</td> <td>2</td> <td>2</td> <td>,</td> <td>2</td> <td>2</td> <td>2</td> <td>a</td> <td></td> <td>2</td> <td>2</td> <td>2</td> <td>*</td> <td>,</td> <td>2</td> <td></td> <td></td> <td></td> <td></td> <td>*</td> <td>*</td> <td></td> <td></td> <td>*</td> <td>*</td> <td></td> <td></td> <td></td> <td></td>	trainin	g pertinent to an emergency	2	2	2	2	,	2	2	2	a		2	2	2	*	,	2					*	*			*	*				
In the evaluation of exposure levelation of exposure levelation of exposure levelation of exposure levelation of decontantion of the evaluation of decontantion of decontantion of the evaluation of the evaluat	1. How wan	y Corps aembers are competent																														
In the reactive comparation of decontransional deconterval deconterval decontexe decontexeverse deconterval deconterval deconterval deconterval	In the	evaluation of exposure levels?	0	0	0	0 0	10	9	0	0	0	-	0 0	1	c	DK	•	c	0	0	0	0	-	•	0	•	•	-	0	0	0	0
and treatment of individuals exposed 0 0 0 1 0	a. Nov san	y Corps members are competent evaluation of decontamination																														
9. to reprote relation 9. to reprote relation 10. ve propried relation 11. ve a relation 11. ve a relation 12. ve a relation 12. ve a relation 13. ve a relation 14. ve a relation 14. ve a relation 15. ve a relation 16. ve a relation 17. ve a relation 18. ve a relation 19. ve a relation 11. ve a relation 12. ve a relation 13. ve a relation 14. ve a relation 15. ve a relation 16. ve a relation 17. ve a relation 18. ve a relation <	and tre	atment of individuals exposed	•						4	4					4		4					•	•	4	•	4	•		4	•		
to respond to a major radiological diameter (0-101) 0 2 2 0 0 4 7 0 0 3 0 2 0 0 3 0 1 - 0 0 3 0 2 0 0 EFERCENCY MESPONSE FADCEDUMES 10. What isopical emergency ¹ 11. What isopical emergency ¹ 12. What is the distance from the factheat 13. What is the max. 6 of major traume or evelocal partners that your Ambulance 14. Using the max. 6 of major traume or evelocal partners that your Ambulance 15. What is the max. 6 of major traume or evelocal partners that your Ambulance 15. What is the max. 6 of major traume or evelocal partners that your Ambulance 16. What is the max. 6 of major traume or evelocal partners that your Ambulance 17. What is the max. 6 of major traume or evelocal partners that your Ambulance 18. What is the max. 6 of major traume or evelocal partners that your Ambulance 19. What is the max. 6 of major traume or evelocal partners that your Ambulance 19. What is the max. 6 of major traume or evelocation to the max. 6 of major traume or evelocation to the max. 6 of major traume or evelocation to the max. 6 of major traume or evelocation to the max. 6 of major traume or evelocation to the max. 6 of major traume or evelocation to the max. 6 of major traume or evelocation to the max. 6 of major traume or evelocation to the max. 6 of major traume or evelocation to the max. 6 of major traume or evelocation to the max. 6 of major traume or evelocation to the max. 6 of major traume or evelocation to the max. 6 of major traume or evelocation to the max. 6 of major traume or evelocation to the max. 6 of major traume or evelocation to the max. 6 of major traume or evelocation to the max. 6 of major traume or evelocation to the max. 6 of major traume or evelocation to the max. 7 of major traume or evelocation to the max. 7 of major traume or evelocation to the max. 7 of major traume or evelocation to the max. 7 of major traume or evelocation to the max. 7 of major traume or evelocation to the max. 7 of major traume or evelocation to the max. 7 of major traume or evelocation to the max. 7 of major traume or ev	9. How pre-	ting radiation: pared are your Corps members	•			2	-	0	0	0		-	0		D		0	2				2	-	P	•	>	*	•	2			5
DIRACLMCY ALSPONSE PROCEDURES 10. What loopital would you take patients 11. What is the distance from the farthest 11. What is the distance from the farthest 12. What is the max. I of mejor traume of evideal patients that your Ambulance	dissie	ond to a major radiological r (0-10?)	0	~	2	0 0	3	~	0	0	0	-	0 2	0	0	60	0	0	c	0	-	,	0	0	-	0	0	-	0	2	0	60
10. What loopital vould you take patients In a radiological energency ¹¹ FM K St St CC K KSB CC - SA SA - SA KSB CC R R RH RL SA CC RH FM CC LK CC GS FM K FM SA 11. What is the distance from the farthest point in your area to this hospital? 40 28 10 45 30 13 2 35 20 45 55 13 32 4 - 15 18 50 8 25 36 - 30 11 40 15 4 14 12. What is the max. F of major traume of evolute patients that your Ambulance	ENERCENCY R	ESPONSE PROCEDURES																														
11. What is the distance from the farthest point in your area to this hospital? 40 28 10 45 30 13 2 35 20 45 55 13 32 4 - 15 18 50 8 25 36 - 30 11 40 15 4 14 12. What is the max. F of major trauma or medical patients that your Ambulance	10. What to	apital would you take patients diological emergency?	£	×	sc s	A 00	*	KS8	8	1	SA	8A	- SA	KSB	8	*	*	ž	at s	A CC	RH RH	EN .			30	ž	8	cs	E	-	×	
12. What is the max. F of major trauma or medical partents that your Ambulance	11. What is point is	the distance from the farthest n your area to this hospital?	0.4	28 1	7 01	5 36		2		. 4	35	20 4	5 53	-	32	4	*	-	8	0	1 25	1	*		36		30	=	0 7	15	-	
	12. What Is sedical	patients that your Ambulance																1	,						-		•		-	-		1.0

¹SA = St. Anthony; BM = Rockford Memorial; K = Kishwaukee; SC = Sandwich Community; CE = Community Central-Sterling; R = Nearest Rockford; RL = Rochelle; FM = Freeport Memorial; CS = Galena Stauxe.

	Ambulance Service Number:	1	E	7	S	9	4	8	6	01	II	115	EI	SI	91	0.1	17	OT	00	12	22	53	77	52	92	12	82	52	1000	30	31
The relation of the second of the relation	 What is the maximum number of non- pebulatory people that your Ambulance Corps can transport at one time? 	• •	~		~	•	~	~			-		-		2					~	12			•	~	-					
	<pre>15. Due your Lorpe news a written protocol for radiological meetgency procedures? 15. In the event of a radiological meetgency, do you have a written protocol for an emergency response to accidante involving</pre>	:		*	x	۲	z	x	x	*	x ·		*								*	*	•	*					:	:	:
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	other injuries as well as radiation asposure? 16. Do you have a written protocol for the transporting of patients contaminated	:	*	*	*	۲	z	×	*	٠	z		*		-					*	*		*		*	*		*		:	2 2 3 2
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	in above? 17. Do you have a written protocol for the evecuation of people dependent on others for mobility during a radiological	:	•	×	*	*	x	×	*	*	z	*	*	z		-			2	*	*	a (,	*	*		*	-			:	
1. • • • • • • • • • • • • • • • • • • •	emergency? 18. Has your Corps ever been contacted by		*	*	×	*	ž	*	*	z	z	*		z	-	-		2	2	*	*	•	*	*	*	*	-	-		*	*
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	anyone from the SDA rei Byton amergency response plan? 19. Are you ware of any efforts to assign a support role to your Ambulance Service		*	*	*	×	*	z	M	×	ž	*	×	z	-	-	-	-		*	*	8			*	*	-			*	
mould respond to a marginicy remitting mould respond to a marginicy remitting Pyron muclear facility1 - 0 10 21 - 0 10 21 - 0 10 - 0 10 - 0 10 21 - 0 10 21 - 0 10 21 - 0 10 - 0 10 - 0 10 - 0 10 - 0 10 - 0 10 - 0 10 - 0 10 - 0 10 - 0 10 - 0 10 - 0 10 - 0 10 - 0 10 - 0 10 - 0 10 - 0 10 - 0 <td< td=""><td>as a part of an integrated response to a radiological emergency? 20. To the best of your knowledge, how many of your Ambulance Corps accebers</td><td>2</td><td>*</td><td>*</td><td>*</td><td>*</td><td>*</td><td>z</td><td></td><td>ž</td><td>z</td><td>z</td><td>z</td><td>z</td><td></td><td>-</td><td>-</td><td>-</td><td></td><td>*</td><td>×</td><td>Ħ</td><td>×</td><td>*</td><td>z</td><td>×</td><td></td><td>-</td><td>*</td><td>:</td><td>*</td></td<>	as a part of an integrated response to a radiological emergency? 20. To the best of your knowledge, how many of your Ambulance Corps accebers	2	*	*	*	*	*	z		ž	z	z	z	z		-	-	-		*	×	Ħ	×	*	z	×		-	*	:	*
11. Do you have any disease contrasts contrasts contrasts for training indication in the world and contrast and second interest of a radiological mercancy? 11. No you have any disease contrast for training porter contrast and second interest of a radiological mercancy? 11. No you have any disease contrast for training porter contrast and second interest of a radiological mercancy? 11. No you have any disease contrast for training porter contrast and second interest of a radiological mercancy? 11. No you have any disease contrast for training porter contrast and second interest of a radiological mercancy? 11. No you have and training porter contrast and second interest of a radiological mercancy? 11. No you have and training porter contrast and second interest of a radiological mercancy? 11. No you have and training porter to you have and you have you have you have and you have and you have and you h	would respond to an asergency resulting from a radiological release from the Byron nuclear facility?	•	10	23	Χ.		2		0	0	•	~	~	11 0		0	12		1	0	30	1	λ.	~	~	<u> </u>	10		-	1 10	1 10 5
11. Do you have any diseaser calinate containing the anyphican necronaly for the anyphican marganicy? 13. The and decontaination in the containation in the containation in the containation in the following protective any diseaser (f w) of the following protective any of the integrate of the series of the following protective any of the integrate of the series of the following protective any of the following protective and the following protecting protective and the following prese	EQUITING MENT																														
31. Plass indicate the number (if ary) of the following protective equipment inter you have available in your abbu- lates for use by your Abbulance Corps usebers1 Inter you have available in your Abbulance Corps Inter you have any Inter Containes Inter X Inter Containes Inter X Inter X<td> Do you have any disaster cahinets con- taining the supplies necessary for trateset and decontamination in the event of a radiological amergency? </td><td>:</td><td>*</td><td></td><td>*</td><td></td><td>*</td><td></td><td></td><td></td><td></td><td></td><td>z</td><td>2</td><td>*</td><td></td><td>*</td><td></td><td></td><td>*</td><td>*</td><td></td><td></td><td>*</td><td>*</td><td>*</td><td>×</td><td></td><td>*</td><td>:</td><td>*</td>	 Do you have any disaster cahinets con- taining the supplies necessary for trateset and decontamination in the event of a radiological amergency? 	:	*		*		*						z	2	*		*			*	*			*	*	*	×		*	:	*
Cloves	22. Please indicate the number (if any) of the following protective equipment that you have available in your ambu- lances for use by your Ambulance Corps seebers?														P																
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21. Does your Ambulance Corpa have any radiation survey instruente? - 0	Head Coveringe			00	00	s., 1		4 1	0 0		0 0	0 0	0 0		auuo	00		20	00	00	00	1.1	• •	• •	00	• •	K 8		0 0		0 - 0
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2). Does your Ambulance Corpa have any NNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNN	Plastic Bage Marked as Radiological Waste Containers	0 -	0	0	0	ŕ	0	,	0	0	0	0	0	0	d IIV	0		0	0	0	0		- 0	5 °		0	1 1		• •		
	 Does your Ambulance Corps have any radiation survey instruments? 	*	z	z	۲	z	~	z	z	z	z	z	*	z	*	z	z	x	*	*	*			*	,						

- 15 _

APPENDIX 3

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ROCKFORD LEAGUE OF WOMEN VOTERS - DAARE/SAFE

RADIOLOGICAL EMERGENCY RESPONSE SURVEY

AMBULANCE MEDICAL SERVICES

January, 1983

Please complete by January 10 and return to:

Public Health Preparedness Survey 3004 Imperial Oaks Rockford, IL 61111

GENERAL QUESTIONS ABOUT AMBULANCE CORPS

.

1. How many people are active members of your Ambulance Corps at this time?

MILLERT

2. How many of these people are Emergency Medical Technicians?

Martin

3. How many ambulances does your Ambulance Corps operate?

Numer

4. Is your Ambulance Corps part of the Police or Fire Department in your area?

Yes No

WORKER PREPAREINESS FOR A RADIOLOGICAL EMERGENCY

5. Have you or your Ambulance Corps members had in-service training on the energency response to ionizing radiation injury and/or decontamination procedures in the past five years?

Yes No Don't Know

Description of Training	# of Ambulance Members Trained	Langth of Training In Bours	Caces

 Bave you or your Ambulance Corps members had any other training pertinent to an emergency response to ionizing radiation injury and/or decontamination?

.

No Don't Know an

If YES, please complete the chart below.

Description Of Training	f of Ambulance Corps Members Trained	Length of Training In Hours	Dates
	-		

7. To the best of your knowledge, how many of your Ambulance Corps members are competent in the evaluation of exposure levels?

10 prover

Namoer

8. To the best of your knowledge, how many of your Ambulance Corps members are competent in the evaluation of decontamination and treatment of individuals exposed to ionizing radiation?

Namon

 To the best of your knowledge, how prepared are your Ambulance Corps members to Tespond to a major radiological disaster? (More than five persons with radiation injury?)

CIRCLE ONE NOMBER

0	1	2	3	4	5	6	7	8	9	10
tot at	all ad)								1	(Totally Prepared)

EMERGENCY RESPONSE PROCEDURES

10. To what hospital would you take patients who have been injured in a radiological emergency?

Name of Hospital Location

11. What is the distance from the farthest point in your area to this hospital?

Miles

12. What is the maximum number of major trauma or medical patients that your Ambulance Corps can transport at one time?

Number

13. What is the meximum number of non-embulatory people that your Ambulance Corps can transport at one time?

Number

14. Does your Ambulance Corps have a written protocol for radiological emergency procedures?

No Don't Know Yes If YES, please include a copy of the protocol with this survey. If YES, please answer the following questions.

14a. Have the decontamination procedures ever been practiced? No Don't Know If YES, please complete this table. Number of Participants Dates 14b. In your estimation, is this plan feasible at this time, given your present resources? Don't Know No Yes

15. In the event of a radiological energency, do you have a written protocol for an energency response to accidents involving other injuries as well as radiation exposure?

No Don't Know Yes If YES, please include a copy of the protocol with this survey. If YES, please answer the following questions.

15a. Bas this emergency response procudure ever been practiced? Don't Know No Yes If YES, please complete this table. Dates Mumbers of Participants 15b. In your estimation, is this plan feasible at this time, given your present resources? Don't Know Yes No - 21 -

16. Do you have a written protocol for the transportation of patients contaminated in a radiological emergency?

Yes No Don't Know If YES, please include a copy of the protocol with this survey. If YES, please answer the following questions. 16a. Have the transportation procedures ever been practiced? No Don't Know Yes If YES, please complete the following table. Dates Number of Paricipants 16b. In your estimation, is this plan feasible at this time, given your present resources? Yes Don't Know No

17. Do you have a written protocol for the evacuation of people dependent on others for mobility during a radiological emergency?

No Don't Know Yes If YES, please include a copy of the protocol with this survey. If YES, please answer the following questions. 17a. Have the evacuation procedures ever been practiced? Yes No Don't Know If YES, please complete the following table. Dates Mumber of Participants 17b. In your estimation, is this plan feasible at this time, given your present resources? No Don't Know Yes

- 23 -

18. Hes your Ambulance Corps ever been contacted by anyone from the Emergency Services and Disaster Agency regarding the Byron emergency response plan?

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No Don't Know Υ.

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If YES, please describe what was involved in this contact in the space below.
- 19. Are you aware of any efforts to assign a support role to your Ambulance Service as a part of an integrated response to a radiological emergency?

Yes No Don't Know If YES, please answer the following questions. 19a. Please explain you role in the space provided below. (Include Evacuation procedures as well as Emergency treatment and transport.) Please be specific. 金金 19b. Have you ever had a formal discussion of this role with your Ambulance Corps members? Yes Don't Know No 19c. To the best of your knowledge, given your present membership and resources, how competent is your Ambulance Corps to fulfill this role in the event of a radiological energency resulting from a breach of containment at the Byron nuclear power plant? CIRCLE ONE NUMBER 0 1 2 3 4 5 6 7 8 9 10 Not at all (Totally Prepared) Prepared)

- 25 -

20. To the best of you knowledge, how many of your Ambulance Corps logical release from the Byron nuclear facility? No prover

(estimate) NUMBER

20a. Please explain the basis for your answer.

DOULIPMENT

21. Do you have any disaster cabinets containing the supplies necessary for treatment and decontamination in the event of a radiological emergency?

Yes No

22. Please indicate the number (if any) of the following protective equipment that you have available in your ambulances for use by your Ambulance Corps members in the event of a radiological emergency. (Please enter 0 for none and D.K. for Don't Know.)

Protective Gloves	-
Protective Gowns	
Protective Masks	
Protective Shoe Coverings	_
Protective Bead Coverings	_
Personal Dosimeters	_
Plastic Bags Marked As Radiological Waste Containers	
Blankets	

23. Does your Ambulance Corps have any radia ion survey instruments?

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Yes No Don t Know

If YES, please complete a following table.

Туре	# of members w/knowledge to operate	Calibrat Range	30/	t of In- struments	Date last Tested (mo./yr.)

24. Would you be willing to provide us with list of the names and phone numbers of your Ambulance Corps members o that we may ask a random sample of them a few questions? (Their smes would remain anonymous if they so desire.)

Yes No

I have answered this survey volunta ily and to the best of my ability.

Signature

Date