UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

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BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of	)	
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	)	
COMMONWEALTH EDISON COMPANY	)	Docket Nos. 50-454 OL
	)	50-455 OL
	)	
(Byron Nuclear Power Station, Units 1 & 2)	)	

TESTIMONY OF JAMES L. MURPHY
ON LEAGUE AND DAARE/SAFE CONSOLIDATED EMERGENCY PLANNING

CONTENTIONS 3 and 13

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TESTIMONY OF JAMES L. MURPHY

My name is James L. Murphy. I live in Rochester, New York. I received my B.S. in Community Health from the State University College in Brockport, New York (1974) and my Master of Public Health (MPH) degree in Environmental Health from the University of Michigan School of Public Health (1980).

As a public health specialist working for the New York Public Interest Research Group, Inc. (NYPIRG) between March, 1982 - March, 1983, it was my responsibility to assess, by means of surveys, the public health response capability of the four counties which lie within the ten mile EPZ for the Indian Point nuclear generating station. Prior to my employment at NYPIRG, my formal training in the providing of health care for radiation-related illnesses included a course in my masters program which was entirely devoted to radiological health. Radiological health and surveying methods were also dealt with in other courses such as environmental health science and principle and practice of public health.

To design and implement the surveys, I enlisted the help

of three other health professionals: Joan E. Harriss, MPH; James Plews-Ogan, RN,FNP; and Margaret Plews-Ogan, RN, FNP. Briefly, Joan Harriss' training is also in the area of health education and survey design and research. Ms. Harriss developed the final survey format. The Plews-Ogan's were nurse practitioners who were also ambulance service members and who had previously researched radiological emergency response. From the beginning our intention was to produce surveys which could be used to assess medical and public health response capabilities in the vicinity of other nuclear generating stations. We believe that we have succeeded in developing such surveys for hospital emergency departments, ambulance medical services, and residential health care facilities.

The first survey was developed for hospital emergency departments to assess their ability to treat victims of a radiological emergency. A second survey examined the ability of ambulance services in the area to respond to a radiological emergency. Both of these surveys looked at training, equipment, knowledge of role within emergency plans and willingness to fulfill such a role. The third and final part of our survey research included a look at the ability of nursing homes and hospitals within the ten mile EPZ to evacuate the residents from the facility and to relocate to another facility somewhere outside the EPZ.

By November, 1982, research was completed and published and in March, 1983, I testified before the Indian Point ASLB. My original testimony, my supplemental testimony, the final

report, and the surveys upon which the report was based were accepted into the record of the proceeding in their entirety.

In December, 1982, the Sinnissippi Alliance for the Environment (SAFE) requested and received copies of my report and related surveys for the purpose of making their own evaluation on the state of medical and public health preparedness in the area surrounding the Byron nuclear generating facility.

On March 26, 1983, I was asked to provide technical assistance to SAFE to evaluate the validity and reliability of their assessment which was done by using the NYPIRG surveys.

The surveys which were designed by myself and my colleagues, and that have been used by DAARE/SAFE and the Rockford LWV will yield reliable information regardless of the surveyers knowledge of radiologic emergency response needs. In designing the surveys we performed an extensive literature search in order to determine what is needed for an effective radiologic emergency response. Though our original study was concluded in June of 1982, my research has been ongoing and I have not read anything since which has lead me to believe that our determinations were incorrect. We also sampled the surveys before the survey format was finalized. This involved the distribution of surveys to a hospital and an ambulance service director to ascertain the clearity and precision of the questions and the thoroughness of the study. Our product was essentially complete. The only remaining

tasks were the adaptation of the surveys to the specific area being researched, the development of a cover letter, the distribution of the surveys and the tabulation of the responses.

There were some changes made in the ambulance (numbers 18, 19, 19c and 20) and hospital (numbers 11 and 12) surveys to adapt them to the Byron region. With one exception the changes were simply an alteration of a state agency's title or the name of the plant in question. The other change which was made to #19 in the ambulance survey and #12 in the hospital survey was in recognition of the preliminary nature of the Byron site specific plan. These changes were minor and had no impact on the reliability of the survey.

The choice of the population to be surveyed, that is, ambulance services and hospitals within Region 1-A, was a wise one. The Byron plant is cited only a few miles from the center of the nine county region and in the event of a radiologic release at significant proportion, the ambulance services in this region are those most likely to be mobilized and the first to arrive. The hospitals in the region would also be those most accessible.

The cover letter which accompanied the surveys stressed the importance of giving a response but it was, appropriately, not indicated that any particular response was expected or more desirable. There was also a clear statement that no respondents would be favored or criticized based on the nature of their responses. This is also useful to assure reliable answers. It is my considered opinion that it is not

likely that respondents were biased by the cover letter which accompanied the surveys.

Finally, DAARE/SAFE and the Rockford LWV identified themselves as the sponsoring organizations without any statement of belief. Had the intervenors misrepresented themselves or not identified the entity performing the survey, potential respondents may have been prevented from taking the survey seriously. This would have adversely effected the response rate. In any event, I do not believe any bias was instilled by the honest and forthright identification of the groups sponsoring the survey.

The statistical analysis performed by CHPNI under the direction of Joel Cowen was a more thorough and professional presentation than that which was ultimately accepted into evidence by the Indian Point ASLB. The CHPNI analysis of the ambulance data should prove most useful in assessing the readiness of area services. The tabulation of the hospital surveys was more rudimentary but usefull nonetheless.

A brief explaination of the surveys themselves is in order. NUREG-0654, Section L, 'Medical and Public Health Support' requires hospital and medical services which have the capability for the evaluation of radiation exposure and uptake and the treatment of contaminated individuals. The surveys only assess the availability of the most basic care for external contamination. I did not look at long term care for victims receiving doses in excess of 100 rems nor did I survey the ability to assess and treat internal con-

tamination by radioactive isotopes. It is, of course, inconsistent to plan for people having radioactive isotopes settle from a plume onto their bodies yet not prepare a medical response for the simultaneous inhalation or ingestion of these isotopes. These situations require a much higher level of medical care than that required for minor external contamination. Consequently an assessment based on our surveys would tend to be an optimistic representation of preparedness.

Though the surveys were less demanding it is my belief as a public health professional that all victims of radiological accidents have health rights. They have the right to receive the best possible assessment of the extent of their contamination and they have the right to receive the best possible estimate of their total exposure.

Indeed, these crucial estimates are the basis for triage, i.e., determining the types and extent of medical treatment needed for each individual victim. Without accurate triage, no adequate medical and public health response is possible. A victims rights extend to treatment.

—— Children, the infirm, and the elderly will require significant medical treatment at exposure levels above 100 rems. Healthy adults will require such care at 200 rems and above. Such care would include immediate baseline lymphocyte counts and continual lymphocyte monitoring for at least six weeks, reverse isolation because of depressed immune systems, antibiotic therapy to prevent infection, and transfusions to

replace necessary blood components.

Summarizing, the following problems are inherent in any radiological accident and must be resolved in order to provide a reasonable degree of safety to citizens:

1. problems of assessing internal contamination;
2. problems of assessing total individual exposure;
3. problems of effective triage;
4. limited capacity for treatment of radiological injury;
5. logistical problems of evacuation and relocating special facilities;
6. lack of adequate preparation of emergency workers;
7. development of surveys and excercizes capable of accurately assessing the medical and public health aspect of emergency plans.