

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

FEBRUARY 21, 1983

This supplemental testimony is being filed because at the time of the filing of my original testimony, the research upon which my statements are based was incomplete. I am submitting the NYPIRG report, "Ready or Not II: Public Health Preparedness for an Accident at Indian Point," as the core of my testimony.

From April through September of 1982 I conducted a comprehensive research project to determine the level of medical and public health preparedness in the area around Indian Point to respond to a major reactor accident. I will relate the results of this project in terms of the requirements set forth in NUREG-0654.

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. It must be realized that for accreditation, all hospitals must have some type of set procedures for responding to radiological incidents. However, there is no requirement for the volume of patients to be treated, i.e., a hospital which is able to treat 2-3 radiologic victims is considered as compliant as one which is able to provide treatment for dozens.

I surveyed hospitals in Putnam, Orange, Rockland, and Westchester counties to evaluate personnel training, equipment, and facility preparedness to respond to a radiological emergency. My research has shown that only three hospitals in these counties which surround Indian Point can treat more than 10 victims of a radiological accident at any one time. Bear in mind that I surveyed for only the most basic of care for external decon-

tamination. 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 contamination by radioactive isotopes. These situations require a much higher level of medical care than that of minor external contamination. Consequently the assessment given in my report is based on quite optimistic reporting even though the conclusion of the report is that the area is woefully unprepared to respond to a major radiological disaster.

On this note let me state here that present emergency planning is seriously deficient because it is not preparing for exposure levels exceeding 100 rems nor is it preparing for the possibility of internal contamination.

It is inconsistent to plan for people having radioactive isotopes settle from a plume onto their bodies yet not prepare for the simultaneous inhalation or ingestion of these isotopes. And it is sheer folly not to allow for the possibility of dose levels exceeding 100 rems in the aftermath of a large radiological release. Yet from conversations with county, state, and federal officials throughout the past year it has become clear to me that no one is expecting, and hence not planning for radiological accidents which go beyond minor external contamination or exposure levels above approximately 50 rems. This is completely irresponsible from a public health standpoint.

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.

Children, the infirm, and the elderly will require extensive medical treatment immediately at exposure levels above 100 rems. Healthy adults will require such care at 200 rems and above. Such care would include immediate baseline leukocyte counts and continual leukocyte monitoring for at least 6 weeks, reverse isolation because of depressed immune systems, antibiotic therapy to prevent infection, and transfusions to replace necessary blood components. Hospitals in the area of Indian Point can provide these services readily, but only to a very limited number of people. Any emergency planning which does not take these vital services into consideration is seriously deficient. It is my considered opinion that these issues are not addressed in the Radiological Emergency Response Plans (RERP) for the counties surrounding Indian Point.

NUREG-0654, Section L. (3) requires the State to develop a list of hospitals which are capable of providing treatment to victims of radiological accidents. I spent several weeks in procuring this list from the New York State Radiological Emergency Preparedness Group (NYSREPG). Of the hospitals on

this list, five are located in the area of Indian Point and were evaluated in my report. I refer you to pages 8-9 of the attached report for a short synopsis of the results regarding these facilities. I would summarize the report by saying that I disagree with the characterization that all of these hospitals are prepared to respond in an effective manner.

For example, Phelps Memorial Hospital in North Tarrytown, 12 miles from Indian Point and the first hospital to be reached as one leaves the Westchester EPZ, appears on the NYSREPG list. However, on a 0-10 scale, with "0" meaning "not at all prepared" and "10" meaning "totally prepared", the Director of Emergency Services at this hospital rated both staff and facility preparedness to manage a major radiologic emergency as "0." In addition the Director of Emergency Services at New Rochelle Hospital Medical Center, another hospital on the NYSREPG list, rates staff preparedness as "1" and facility preparedness as "4."

A rather curious omission on this list is Peekskill Community Hospital, which, because of its contract to provide care to onsite radiation injuries at Indian Point and the equipment and training provided by the Indian Point utilities, is perhaps the most prepared hospital in the area to respond to radiological emergencies. It is certainly the most experienced, due to several onsite accidents through the years. Perhaps this hospital does not appear on the list because its proximity to Indian Point, within three miles, would dictate evacuation in the event of a major accident at Indian Point.

My research also included a look at the ability of special facilities (nursing homes, adult homes, extended care facilities, hospitals) within the 10-mile EPZ to evacuate the residents from the facility and to relocate to another facility somewhere outside the EPZ. All special facilities have building evacuation plans as required by the State but the vast majority (81% of those responding) have no ability to transport clients and many (31%) have no plan as to where they can relocate.

In trying to verify the instructions and information contained in each county RERP, I found many discrepancies between what the plans stated and the understanding of facility administrators as to what they are expected to do.

For example, three Westchester County facilities reported that at least some of their clients will be transported to Phelps Memorial Hospital in North Tarrytown. Yet nowhere in the Westchester County RERP is Phelps Memorial Hospital mentioned as a receiving institution. In addition, I found that only one of the many bus companies listed in the RERP for evacuation transport was in fact willing to provide such services.

The third and final part of my research examined the ability of ambulance services in the area to respond to a radiological emergency. The survey looked at training, equipment, knowledge of role within the RERP, and willingness to fulfill such a role.

These survey results showed without exception, that respondent ambulance services in the area of Indian Point are untrained, ill-equipped, and unaware of their role within the RERP. Not surprisingly, because of this and other factors, only 19% of the membership of the respondents reported being willing

to respond to a radiological emergency at Indian Point. This is consistent with the testimony of an ambulance service member given at the FEMA public hearing of July 26, 1982 in Cortlandt, NY. This individual stated that, because of the unique qualities of radiological emergencies and because of his overriding concern for the safety of his family, he would not report for duty but rather would evacuate his family from the area.

Ambulance services have a crucial role within the RERP. They are to evacuate residents of hospitals and nursing homes and will also evacuate citizens needing specialized transport for evacuation. Added to this, they will also be called upon to transport injured and/or contaminated individuals to appropriate facilities. However, at the present time they are not in any state of readiness which would allow them to carry out their assigned tasks with any level of safety or effectiveness.

I have made several attempts to make all the above information, along with major deficiencies, known to the proper officials. I presented this information at the FEMA public hearing on July 26, 1982. In attendance were FEMA personnel, NYSREPG personnel, and Con Ed and PASNY officials. I submitted copies of my report to Donald Davidoff, Director of NYSREPG, and to Frank Petrone, Director of FEMA, Region II. In addition, in December, 1982 I met with Mr. Petrone and three members of his staff to discuss the findings of my report.

To date, I have received absolutely no response from Mr. Davidoff or his associates at NYSREPG. The only response

that I have received from my endeavors is a letter from Mr. Petrone, dated 1/5/83 stating that the New York State Department of Health did a survey of radiological treatment capability in New York State hospitals approximately one year ago and that the Department of Health feels that there is no need for reexamination of the survey data. In addition it was stated that New York State (presumably NYSREPG) is basing its emergency planning along the lines of the ASLB San Onofre decision which concluded that "relatively few people" will be injured and/or contaminated as the result of a major reactor accident. No basis for this decision was given to me.

As to our reporting of the inability of special facilities within the EPZ to evacuate and relocate in the event of radiological emergencies, the letter reported that the deficiencies "...have been identified and are in the process of being addressed by the state." Exactly what corrective actions were being taken was not made known to me.

There was no mention made of the total lack of preparedness of ambulance services to respond to a radiological accident as documented in my report. Mr. Petrone, for reasons unknown to me, chose to ignore this matter entirely.

In January of this year I repeated my concerns to Mr. Petrone in writing; to date I have received no response. I wish to make clear my good faith efforts in trying to call the attention of key officials to serious shortcomings in the present approach to radiological emergency planning. Officials of NYSREPG and FEMA have consistently downplayed, misrepresented, or ignored the deficiencies in emergency planning and have

continually reported to the NRC that problems are small and that progress is being made in making corrections. Much to the contrary, I believe that the deficiencies in medical and public health support are major and in need of a serious and concerted effort in order to be resolved.

Summarizing my above comments, the following problems are inherent in any radiological accident within a densely populated area 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.

It is not at all clear to me that these issues are being addressed and in fact may well be impossible to correct.

As a public health professional who has been investigating emergency planning in support of radiological emergencies at Indian Point, I have other concerns besides those presented in my report. Specifically these involve the ability of the present method of drills and exercises to accurately assess the medical and public health aspect of the RERP and also the inadequacy of radiological training that is presently being given to emergency workers.

Efficacy of Radiological Exercises and Drills

The present method for testing emergency preparedness involves the mobilization of the Commissioners of emergency response agencies to each county EOC and the mobilization of relatively few emergency workers. In addition, certain ambulance services are alerted for stand-by, as are the special facilities within the EPZ. A few individuals are transported to reception centers to go through the motions of external decontamination.

While readily acknowledging the need for practice and realizing the logistical problems of large-scale exercises, I must nevertheless emphasize that the alerting and mobilization of only a slight fraction of the total workforce has severe limitations in assessing or predicting the actual state of radiological emergency response preparedness, most certainly with regard to medical and public health capability. I am therefore of the opinion that the March, 1982 exercise gave no clear indication of medical and public health preparedness, nor will the exercise of March, 1983 provide a more definitive assessment if it mimics the approach of March, 1982, as would seem to be the case.

Rather than simply criticize, I will put forth an alternative to assessing medical and public health capability through unrealistic exercises and drills. I sincerely suggest that NYSREPG or FEMA produce written surveys of their own design which provide a comprehensive assessment of the ability

of each component of medical and public health support to perform its function.

I recommend the following:

1. design and send a survey to ambulance services which evaluates training, equipment, awareness of role within any RERP, willingness to respond to radiological emergencies;
2. design and send a survey to special facilities within the EPZ which assesses the ability to get clients out of the building, into identified transport vehicles with guaranteed drivers, and move clients to identified receiving institutions provident the requisite care;
3. design and send a survey to any hospital involved in radiological emergency response to evaluate: (a) personnel training and level of competence, (b) equipment, (c) facility preparedness, (d) overall preparedness;
4. design and send a survey to all health departments involved in radiological emergency response to evaluate: (a) personnel training and level of competence, (b) monitoring and dose assessment capabilities, (c) communications link with reactor site, (d) decontamination capability and capacity, (e) ability to assess human contamination, both external and internal, and (f) environmental monitoring.

Taking this approach in assessing preparedness provides several advantages. First, every component of emergency response is assessed, not just the few that are mobilized. Second, a written self-evaluation is on file from every

component involved in emergency response. Third, compared with the cost of conducting exercises, this method is extremely inexpensive, and very cost effective.

Summarizing, this method could readily fill in the many gaps left by cumbersome exercises and drills.

Inadequacy of the Training for Emergency Workers

Perhaps most upsetting to me as a responsible health professional is the quality of preparation being given to those individuals who will bear the greatest risks from a radiological accident--the emergency workers. These individuals, the vast majority of whom have never worked with radiation, will be expected to work in a potentially radioactive environment and may be exposed to life-threatening levels of ionizing radiation. Yet presentations from New York State trainers downplay greatly the danger inherent in performing emergency tasks during a radiological emergency. In November of last year I observed the training session given by New York State to workers of the Rockland County Health Department. At no time was the health risk of working in a radioactive environment realistically presented. Instead, an initial statement was made that, hypothetically, a worker could still staff a position even after receiving 100 rems, due to the delayed onset of symptoms of radiation sickness. And later in the program an overhead projector display showed that the health risk of receiving 10 millirems of ionizing radiation was equal to consuming 40 spoonful of peanut butter or 10 charcoal-broiled steaks.

This type of presentation not only obfuscates the danger involved, it engenders a nonchalance that is entirely inappropriate to the situation. Because of limited background, most emergency workers are easily influenced by this type of presentation.

The group that I observed in Rockland County was mostly administrators and sanitarians who deal usually with air and water quality, restaurant inspections, and rodent control. It is nothing short of criminal to prepare these people with information that deludes and is of no use to them.

In addition, it was mentioned that each worker could be allowed to receive up to 25 rems of radiation before he or she would be pulled from duty. Yet no mention was made of the fact that this level is five times that allowed nuclear plant workers for an entire year. Nor were the health risks associated with this exposure level ever discussed.

I must mention that although Geiger Counters were part of the presentation, no member of the audience had an opportunity to operate one. It is my understanding that at a follow-up training session in January, 1983 there was hands-on experience with Geiger Counters. However, not everyone who attended the first session was available to attend the second session.

Another example of training inadequacy took place for some Westchester County Health Department workers in February, 1983. Before an audience of 50-60 workers, the instructor presented



A NYPIRC- NYPIRG REPORT

READY OR NOT II:

Public Health Preparedness for An Accident at Indian Point



**Surveys of Hospital Emergency Departments and
Ambulance Services in Orange, Putnam,
Rockland and Westchester Counties and
Residential Health-Care Facilities within the
10-mile Emergency Planning Zone**

by James L. Murphy, MPH and Joan E. Harriss, MPH

NEW YORK PUBLIC INTEREST RESEARCH CENTER, INC.

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NYPIRG, the state's largest consumer advocacy organization, established the Indian Point Project in the fall of 1979 to monitor safety conditions at the Indian Point nuclear reactors in Buchanan, New York, 24 miles north of New York City.

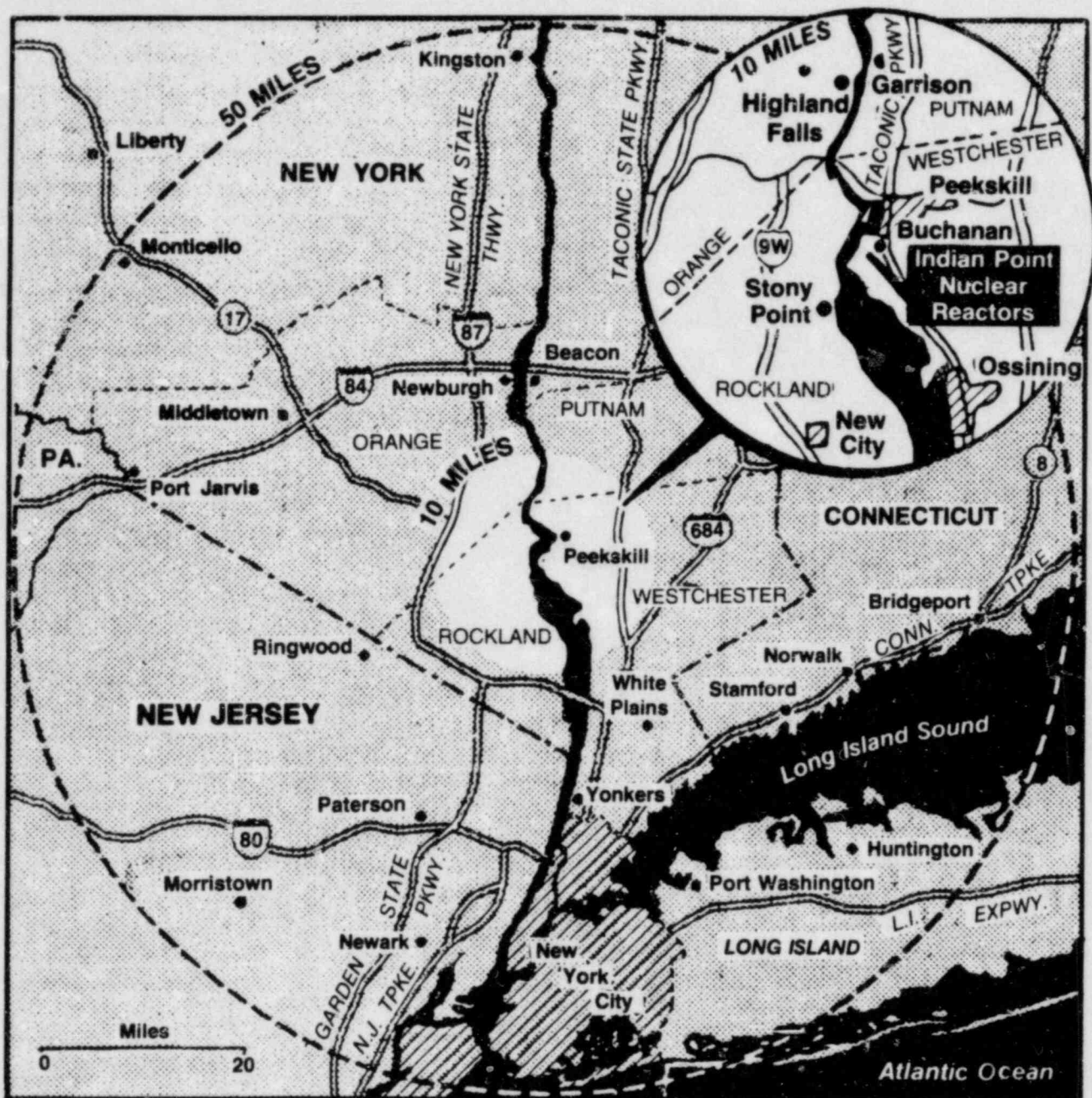
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At the end of a long task, the authors are grateful to many. We begin by thanking Jim and Margaret Plews-Ogan for their invaluable contributions in laying the foundations for the surveys. We continue by thanking John Gilroy and Linda Eganhauser for their help with research, and Bob Holt and Anne Witte for their editorial assistance. We end by thanking Ellen Spilka and Nancy Weeks for typing the report, Kathy Osborn for graphics, and Brian Hatfield for his printing services.

*** *** *** ***

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The New York Times/March 13, 1982

Map shows region within 50 miles of the Indian Point nuclear reactors, with detail of the 10-mile zone around the plants.

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INTRODUCTION

This report is part of an ongoing attempt by the Indian Point Project of the New York Public Interest Research Group (NYPIRG) and Center (NYPIRC) to monitor and evaluate the status of emergency preparedness near the Indian Point nuclear power plants in Buchanan, NY. The three-unit facility is located on the bank of the Hudson River, 35 miles north of midtown Manhattan, in the heart of the most densely populated region of the country. Within 50 miles of Indian Point live 17 million people, more than double the population around any other U.S. nuclear facility.

In an earlier publication,* we presented a study of the state of public information on emergency preparedness in the part of Westchester County within 10 miles of the nuclear plants operated by Consolidated Edison (Con Ed) and the Power Authority of the State of New York (PASNY). The study revealed how ineffectively those utilities have done their job of informing the endangered public of what they would need to know in the event of a serious accident at Indian Point. In what follows, we present a complementary study of public health facilities and services within the four-county area around Indian Point and of their readiness to respond to a radiological emergency.

Nuclear power differs from all other methods of generating electricity in that it subjects the people in the surrounding area to a special kind of hazard--the biological effects of exposure to ionizing radiation. In a nuclear plant various radioactive substances are produced as a result of the atomic fission that heats water to drive the steam generators. Some of these fission products are gases which accumulate inside the plant and which would reach unacceptable levels if not periodically purged. So the NRC permits plant owners in the course of normal operations to routinely discharge small quantities of these radioactive gases into the atmosphere.

At present, there is controversy about the adverse effects of these routine, low-level discharges from nuclear power plants -- some scientists say low-level exposure is harmless, others say no amount of radiation is safe. But there is no question that large doses of ionizing radiation can cause prompt deaths as well as delayed deaths from cancer and other diseases, plus illnesses and genetic effects in future generations.

Most concern about the dangers of nuclear power arises from the fact that there is no way to guarantee that reactors may not undergo serious accidents, in which the complex system of safeguards built into them breaks down and large quantities of radioactive fission products are released into the environment.

Despite the fact that commercial nuclear power is about 25 years old, the utilities and governments involved paid little attention to the possibility of a serious accident until 1979. Then, when the reactor at Three Mile Island came close to a complete meltdown, the Governor of Pennsylvania recommended a partial evacuation and many thousands of people from a wide area chose to evacuate their homes.

* Ready Or Not: Public Preparedness for an Accident at Indian Point, by Richard J. Altschuler. New York: NYPIRG/NYPIRC, 1982.

Emergency response at Three Mile Island was so chaotic that no one could deny any longer the need for advance planning. The NRC issued directives to all nuclear utilities to work with local (county and state) governments, and to draw up radiological emergency response plans. An arbitrary 10-mile circle was drawn around each nuclear plant and designated the "plume exposure pathway." A 50-mile circle called the "ingestion pathway" was also delineated. Evacuation plans were required only for the smaller, 10-mile "Emergency Planning Zone" (EPZ). The deadline for submission of paper plans was January 1, 1981; they were supposed to be implemented three months later, April 1, 1981.

In fact, though plans for the Indian Point region were handed in on time, they still have not been properly implemented. Responsibility for receiving and evaluating the plans rests with the Federal Emergency Management Agency (FEMA), which has taken a lenient -- even indulgent -- attitude toward the utilities and the New York State Radiological Emergency Preparedness Group. As long as some effort was being made and some progress could be pointed to, FEMA did not blow the whistle and inform the Nuclear Regulatory Commission that the state of planning and preparedness for an accident at Indian Point is dangerously inadequate.

Still, at the end of July, 1982, in its "Interim Findings on the Adequacy of Radiological Emergency Response Preparation" at Indian Point, FEMA handed in a rather poor report card: There were serious deficiencies in five planning areas, they said, plus minor deficiencies in a number of others. As a result, the NRC started their "120-day clock" -- that is, the utilities were given formal notice that they had 120 days to make good the deficient aspects of the plans. If at the end of that time (December 2, 1982), they have not done so, they might be ordered to show cause why the Indian Point reactors should not be shut down until such time as their emergency planning and preparedness is "adequate to protect public health and safety."

One immediate consequence of this development was that the NRC Commissioners ordered the Atomic Safety and Licensing Board currently holding hearings on the safety of Indian Point to suspend consideration of emergency planning issues until after the 120-day period.

Meanwhile, however, Dr. Jan Beyea, senior research scientist with the National Audubon Society and an internationally recognized authority on consequences of nuclear plant accidents, had already testified that accidents of a type well recognized by the NRC as possible at Indian Point, could expose many thousands of persons to lethal and near-lethal doses of radiation. According to his extensive computer simulation, even if emergency plans work perfectly and people are evacuated as promptly as the utilities claim is possible, under certain weather conditions people would be irradiated so heavily as to cause early deaths (within six weeks) from radiation sickness, as well as many thousands of illnesses and delayed cancer fatalities. Moreover, Dr. Beyea's calculations show that lethal doses could be delivered well beyond the 10-mile EPZ, and that even New York City could be so seriously contaminated that large areas would have to be abandoned for years.

If a cloud, or plume, of radioactive fission products released during an accident at Indian Point passed over the region, many people could become contaminated with an invisible but partly removable film of particles, which would have to be washed off as soon as possible in order to reduce the total residual dose. Some victims would have a chance of surviving only if they were promptly given elaborate supportive treatment to prevent death by radiation sickness. Hospitalized patients and housebound people would have to be evacuated by large fleets of ambulances, many more than are needed for any normal purpose.

For such reasons as these, it is vital that any emergency preparedness system for the Indian Point region include enough medical facilities staffed by well-trained workers who are willing and able to carry out the specialized procedures for coping with this unique type of medical emergency. One would have expected, therefore, that FEMA would have carefully surveyed the medical facilities of the area as part of its effort to evaluate the adequacy of emergency planning and preparedness at Indian Point. Yet, in its official role as evaluator of radiological emergency planning, FEMA has done no such evaluation, largely confining itself to a study of the planning documents produced by the utilities and their consultants, and by New York State. Consistent with the Reagan administration's general policy of underfunding agencies that have to do with regulation of businesses, FEMA apparently does not have a large enough staff or budget to conduct serious field studies of its own. (In another vital area of emergency preparedness, for example, FEMA has not been able to develop and execute a procedure for evaluating the effectiveness of sirens to warn the public of an accident.)

NYPIRG, skeptical of public health preparedness claims written into the Indian Point emergency plans, conducted a careful and thorough survey of the radiological emergency response capability of the region's hospitals, ambulance services, and residential health-care facilities. Once again, as in our earlier study of public information and preparedness, we have found that what exists in reality around Indian Point is very different from what exists on paper in the State and Utilities' Radiological Emergency Response Plans.

Joan Holt
Director, Indian Point Project

SUMMARY OF THE MAIN FINDINGS*

I. Hospital Emergency Departments

Of the 24 respondents to our survey...

- only 14 have had staff training in the treatment of radiation injury and the decontamination of patients;
- only 16 have any protective equipment for their workers;
- 6 have no facilities for the decontamination of patients;
- only 2 with decontamination facilities have the capability of storing the contaminated water for proper disposal;
- only 3 hospitals report an ability to treat more than 10 victims of a major radiological emergency at any given time.

Of the 11 facilities responding to a question rating preparedness on a scale of 0 - 10 ranging from "not at all prepared" to "totally prepared"...

- over 50% assessed facility preparedness as less than "5";
- the 1 hospital that rated its preparedness as "10" is located within 2 miles of Indian Point and would be evacuated in the event of a major radiological emergency.

*This summary is based on data collected from May through September, 1982.

II. Evacuation/relocation plans for the residential health-care facilities within the 10-mile emergency planning zone (EPZ)

Of the 32 responding facilities...

- 10 (31%) have no evacuation/relocation plan for a major radiological disaster;
- 26 (81%) report that they lack sufficient vehicles for evacuating patients;
- none of the facilities reporting a need for additional transportation vehicles have guarantees that such will be provided (though some report having been told by State representatives that vehicles will be made available).

Of the 6,101 patients reported residing in health-care facilities within the 10-mile EPZ, there is immediate transportation for only 1,230.

Of the 10 facilities rating preparedness on a 0 - 10 scale, 50% rated themselves as "0" or "not at all prepared."

III. Ambulance services in the four counties surrounding Indian Point

Of the 15 ambulance services responding...

- none has a written protocol (a set of plans and procedures) for responding to a radiological emergency;
- none has radiation detection equipment;
- only 1 has personnel dosimeters to measure exposure of workers to ionizing radiation;
- none rated their preparedness in response to a radiological emergency above "5" on a scale of 0 - 10. Over 50% rated themselves "0";
- 12 have had no training in the treatment of ionizing radiation injury or the decontamination of exposed individuals;
- only 2 stated that all their members would respond to a radiological disaster.

Of the 522 active ambulance service members reported...

- only 19% are reported as willing to respond to a radiological disaster;
- only 2% are considered competent in the treatment of radiation injury or the decontamination of individuals.

BACKGROUND AND METHOD

This NYPIRG/NYPIRC report takes an in-depth look at public health response capability in the four counties that surround the Indian Point reactors in Buchanan, New York. In the late spring and summer of 1982, NYPIRG surveyed hospital emergency departments and ambulance services in Orange, Putnam, Rockland, and Westchester Counties to assess their ability to respond to a radiological emergency at Indian Point. In addition, NYPIRG surveyed residential health-care facilities within the ten-mile Emergency Planning Zone (EPZ) to determine their ability to evacuate and relocate their clients in the event of a radiological emergency.

As a guideline for our investigation, NYPIRG used the regulations that have been put forth by the federal Nuclear Regulatory Commission in the document NUREG-0654/FEMA-REP-1-Rev. 1, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants" (hereinafter referred to as NUREG-0654).

A team of four health professionals* examined three aspects of the proposed Radiological Emergency Response Plans for the counties surrounding Indian Point as they relate to public health response: (1) hospital emergency facilities in the four-county region around Indian Point, (2) ambulance services in the four-county region to be used for the evacuation and relocation of hospitals, nursing homes, and the injured from a radiological disaster, and (3) evacuation and relocation of patients in residential health-care facilities within the ten-mile EPZ.

The team first established what we considered "adequate capability"*** criteria for each type of organization to be surveyed. We then designed and mailed questionnaires to all potential respondent organizations. It was necessary also to make a number of follow-up telephone calls to address special problems and to encourage response.***

A complete investigation of public health response capability would have to include an evaluation of local health department capability to set up and operate decontamination facilities "in the field" following an accident. NYPIRG had planned to do this evaluation from cross-examination of health department witnesses in the NRC's special investigation of the Indian Point reactors. Because the NRC hearings were suspended for some months and emergency planning testimony postponed indefinitely, however, we are unable to include this crucial public health preparedness issue in our report.

* Team members included James L. Murphy, MPH; Joan E. Harriss, MPH; Margaret Plews-Ogan, RN, FNP; and James Plews-Ogan, RN, FNP.

** A bibliography of sources used in survey development is included at the end of this report.

*** Copies of the survey questionnaires are obtainable upon request from the NYPIRG Indian Point Project.

DISCUSSION OF FINDINGS

NYPIRG's investigation of public health preparedness for an accident at Indian Point establishes that the emergency planning standards set forth in NUREG-0654, Section L, entitled "Medical and Public Health Support," are not met in the area surrounding the Indian Point nuclear power plants in Buchanan, New York.

Specifically, the following criteria are not met:

First

- L. (1) "Each organization [licensees, state, and county governments] shall arrange for local and backup hospital and medical services having the capability for evaluation of radiation exposure and uptake, including assurance that persons providing these services are adequately prepared to handle contaminated individuals."

The NYPIRG survey reveals that emergency facilities in the Indian Point area are not prepared to respond to a major radiological disaster (see Detailed Results, Part I).

Second

- L. (3) "Each State shall develop lists indicating the location of public, private, and military hospitals and other emergency medical services facilities within the State or contiguous States considered capable of providing medical support for any contaminated injured individual. The listing shall include the name, location, type of facility and capacity and any special radiological capabilities. These emergency medical services should be able to radiologically monitor contamination personnel, and have facilities and trained personnel able to care for contaminated injured persons."

The list presently provided by the State contains five hospitals in the Indian Point area. NYPIRG received surveys from three of these facilities and conducted telephone interviews with the other two. The hospitals and their capabilities follow:

1. Phelps Memorial Hospital--on the 0-10 scale with "0" meaning "not at all prepared" and "10" meaning "totally prepared," (hereinafter referred to as the 0-10 scale) the Director of emergency services rates both staff and facility preparedness to respond to a major radiological disaster as 0.
2. New Rochelle Hospital Medical Center--on the 0-10 scale, the Director of emergency services rates staff preparedness as 1 and facility preparedness as 4.
3. Cornwall Hospital--the Director of emergency services states that 10 victims of a radiological emergency could be effectively treated.

4. Nyack Hospital--the radiology administrator states that 10-50 patients could be treated effectively, depending on the extent of injuries.
5. Good Samaritan Hospital--The Radiation Safety officer of this facility states that 5-10 patients could be treated effectively, depending on the extent of injuries.

Third

- L. (4) "Each organization [licensee, state and county governments] shall arrange for transporting victims of radiological accidents to medical support facilities."

Parts II and III of the Detailed Results section of this report demonstrate that this criterion has not been met.

In addition, NYPIRG's findings indicate that the Federal Emergency Management Agency (FEMA) report of July 30, 1982, to the Nuclear Regulatory Commission (NRC), "Interim Findings on the Adequacy of Radiological Emergency Response Preparation of State and Local Governments at the Indian Point Nuclear Power Station" was erroneous in characterizing the deficiencies in "Medical and Public Health Support" as "minor" (Section L., p. 21). NYPIRG considers these deficiencies to be major. They require remedial action equal in priority to the other five areas of significant deficiencies identified by FEMA which caused the NRC to start the latest 120-day clock for Radiological Emergency Response Plan compliance for the Indian Point sites.*

It is indeed confusing to us that FEMA chose to disregard information concerning significant deficiencies in medical and public health support capability brought to its attention at a FEMA public meeting by one of this report's authors (Murphy) on July 26, 1982, at the Cortlandt Civic Center in Westchester County. Mr. Murphy pointed out at this meeting that several hospitals on a New York State Department of Health list of facilities having radiological treatment capabilities were, according to the NYPIRG survey, unable to respond adequately to a major radiological disaster. In its interim report to the NRC on medical and public health support, FEMA brushed aside this information with the statement that "The adequacy of hospitals with radiological capabilities was questioned." (See "Interim Findings...", page 27.)

NYPIRG's findings also reveal major deficiencies with regard to "Criteria for Review and Approval of State and Local Radiological Emergency Plans and Preparedness" (44 CFR 350.5). Specifically, the federal regulation requires that:

"Adequate emergency facilities and equipment to support the emergency response are provided." (8), and

* The areas of significant deficiency as identified by FEMA are:

- 1) Notification Methods and Procedures
- 2) Public Education and Information
- 3) Protective Response
- 4) Radiological Exposure Control
- 5) Responsibility for the Planning Effort

"Arrangements are made for medical services for contaminated injured individuals." (12)

These criteria are not met in the region surrounding Indian Point.

Lastly, our study reveals that areas of the proposed Radiological Emergency Response Plans (last revision, August, 1981) misrepresent public health response capability.

1) Evacuation of Special Facilities within the ten-mile Emergency Planning Zone.

The plans state that adequate numbers of buses and other vehicles have been assigned to transport nursing home residents to predesignated congregate care centers and that sources of buses, wheelchair vehicles, and ambulances, as necessary, have been identified and are assigned to transport patients from specific hospitals to their host facilities.

Responses to our survey indicate that the above is inaccurate. In a telephone conversation, the Director of New York State's Radiological Emergency Preparedness Group stated that each nursing home and hospital licensed by the State Department of Health is required to have its own emergency plan for any disaster and that it is the responsibility of each individual facility to provide transportation arrangements for the evacuation of its clients in the event of a radiological emergency. He also stated that any problem in procuring the requisite transportation would need to be reported to the State Department of Health and the appropriate agency within each county government.

The responses to the NYPIRG survey show without question that this is not the understanding of the administrators of the facilities. At present, the only facilities with adequate transportation arrangements are those that already have enough vehicles of their own. Facilities that do not own the necessary vehicles for evacuation of their patients have made no arrangements to acquire transportation. Nor was there any indication that arrangements were going to be made in the near future. In fact, two facilities responded that it was their understanding that the State would provide the necessary transport.

It is obvious that there is a deplorable breakdown in communication between the State and the special facilities within the EPZ which would require evacuation and relocation of patients in the event of a radiological emergency.

The problem does not end here. The proposed Radiological Emergency Response Plan for each county lists bus companies that will provide evacuation transport for the special facilities within the Emergency Planning Zone. Telephone inquiries to several of these companies reveal that arrangements had not been made. These transport lists seem to be mere fabrication by the utility consultants who wrote the Radiological Emergency Response Plans in order to fulfill federal requirements on paper. Furthermore, it is clear that neither FEMA nor the New York State Radiological Emergency Preparedness Group made any attempt to verify the accuracy of these transport lists. The unfortunate result of this negligence is that thousands of residents in the special facilities within the Emergency Planning Zone will be effectively stranded during any radiological emergency while the utilities, the State, and FEMA maintain that they are being provided for.

2) Ambulance Services.

The plans state that ambulances are prepared to provide evacuation services to:

- (a) special facilities needing to be evacuated
- (b) homes of handicapped persons
- (c) homes of persons requesting emergency medical transportation
- (d) injured and contaminated patients.

To provide such services would require possible entrance into contaminated areas and transport of radiologically contaminated or injured victims. Responses to our survey indicate that ambulance services are not prepared to respond, nor are they aware of their role in any radiological emergency response. (See Detailed Results section, Part III.)

3) Facilities Providing Radiological Treatment Capabilities.

The proposed plans list eight facilities capable of providing radiological treatment to victims of a radiological disaster in the Indian Point area. NYPIRG takes exception to the claim that all the facilities listed can provide radiological treatment.

The Rockland County Radiological Emergency Response Plans* list three facilities as having radiological treatment capabilities: Letchworth Village Developmental Center, Helen Hayes Hospital, and Rockland County Infirmary. Statements from the administrators of these facilities reveal that none of them have the capabilities specified in the plans.

The Westchester County Radiological Emergency Response Plans list three facilities as having radiological treatment capabilities. Survey responses from these facilities indicate the following:

United Hospital, Port Chester. On the 0-10 scale, the emergency department Director rates staff preparedness to respond to a major radiological disaster as 5. Facility preparedness is rated a 4. The Director states that the staff has not received training in the management of radiation injury or patient decontamination during the past 5 years.

New Rochelle Hospital Medical Center. On the 0-10 scale the emergency department Director rates staff preparedness to respond to a major radiological disaster as 1. Facility preparedness is rated as 4.

Westchester County Medical Center, Valhalla. This facility is prepared to respond to a radiological disaster. One important problem, however, is a lack of storage capacity for proper disposal of water used to decontaminate individuals. An administrator reports that the Medical Center has the capacity to treat up to 60 patients per hour.

The Orange County Radiological Emergency Response Plans list two facilities as having radiological treatment facilities. NYPIRG received a survey response from one of these and contacted the other by telephone. The facilities and their

* On May 18, 1982, by Resolution No. 320, the Legislature of Rockland County formally withdrew the County from participation in the "Rockland County Radiological Emergency Response Plan" prepared by consultants for Con Edison and the Power Authority, operators of Indian Point. The County deemed the Plan unworkable.

capabilities are as follows:

Horton Memorial Hospital, Middletown. This hospital has relatively good facilities for radiological treatment. The supervisor of emergency medical services reports that the hospital can adequately care for 10 victims of radiological emergencies. Facility preparedness is given an 8 on the 0-10 scale by the supervisor.

Arden Hill Hospital, Goshen. An administrator stated that he was unaware of the hospital's role in the Radiological Emergency Response Plan. He assumed that his facility would take non-radiological patients from other area hospitals so that the latter might provide radiological treatment. Arden Hill Hospital is capable of providing treatment for only the most local type of radiological accident, such as an overturned truck carrying medical isotopes.

CONCLUSIONS

Public health facilities and services will have a vital role in any serious accident at Indian Point, such as the ones described by Dr. Jan Beyea in his testimony before the Atomic Safety and Licensing Board in July 1982. Though it is still not the worst that could happen, an accident resulting in a PWR-2 release of radioactive substances would subject huge areas to dangerous levels of radiation, requiring several types of public health response to minimize the toll in human lives and illness. For example:

- Bedridden, house-bound, and mobility-impaired people will have to be transported to safety, whether they live at home or in hospitals and other residential institutions. Yet there are not enough ambulances and other vehicles even to transport institutionalized patients, and no visible means to meet the need.
- People who are subjected to radioactive fallout will need prompt decontamination. Yet existing facilities equipped to perform the job properly will accommodate only a very few persons, and even these have an inadequate staffing of properly trained workers.
- Irradiated people will need immediate supportive treatment. Yet the area's hospitals generally lack necessary equipment and appropriately trained staff, some do not even have agreed-on procedures for treating radiological patients, and often are not even informed that emergency plans assume their cooperation and preparedness.

In these and other respects, the public health facilities and services of the four-county region around Indian Point are woefully and scandalously unprepared for any radiological emergency involving more than a very few patients. They could not possibly play their expected role in a total evacuation of even the 10-mile EPZ.

NYPIRG wishes to make it clear that the deficiencies reported here are not the result of poor administration or incompetent personnel in the institutions surveyed. In our investigation we found that local public health personnel are dedicated, skilled professionals and volunteers who are committed to providing the best care possible for the public.

The state of ill-preparedness is attributable, rather, to the fact that the planners (Con Edison, PASNY, and the State) and the regulators (NRC and FEMA) have approached the problem of emergency preparedness of Indian Point as though it were merely a matter of putting enough words down on paper to satisfy regulations. They have yet to confront realistically the inherent problems of a radiological disaster at Indian Point, with its dense population and inadequate road network.

We found public health response capability to be adequate to the task of responding effectively to natural disasters (fires, floods, etc.) and to some of human origin (e.g., chemical spills, transit accidents) -- those involving perhaps dozens of victims. If a handful of workers at Indian Point were exposed to radiation during a limited on-site accident, for example, the region's facilities could probably cope adequately with the situation. But medical and public health capability to respond to a major radiological disaster at Indian Point is so poor as to constitute a major and serious deficiency of radiological emergency planning and preparedness. It is evident that FEMA's evaluation of this deficiency as "minor" could be based only upon ignorance of the true state of affairs, as revealed by the NYPIRG survey.

DETAILED RESULTS

PART I

HOSPITAL EMERGENCY DEPARTMENTS IN ORANGE, ROCKLAND, PUTNAM, AND WESTCHESTER COUNTIES

The New York State Department of Health lists five hospitals in the four counties surrounding Indian Point having radiological treatment capabilities. In addition, the proposed Radiological Emergency Response Plan for each county lists other hospitals having radiological treatment capabilities.

In order to assess the actual abilities of hospitals in the four counties surrounding Indian Point, NYPIRG mailed surveys to the 26 hospitals in this area having emergency departments.

Thirteen facilities (50%) completed and returned our questionnaire. Another eleven facilities were contacted and interviewed by telephone, bringing the response total to twenty-four (92% response rate). Two facilities refused to respond to our surveys or telephone calls.

Our results are at variance with what is reported by the State Department of Health and what is presented in the Radiological Emergency Response Plan.

TABLE I-A

RESPONSES OF 13 HOSPITALS TO NYPIRG QUESTIONNAIRE

HOSPITAL	Emergency Dept. Patient Capacity	Radiation Training?	Radiation Survey Equipment?	Protective Equipment?	Decontamination Facilities?	0-10 Preparedness Self-rating
St. Agnes, White Plains Westchester County	4	no	DK	DK	no	1
Yonkers General Westchester County	5	yes	yes	no	yes	7
Doctors Sunnyside Hospital Port Jervis, Orange County	15	no	yes	yes	yes	3
Horton Memorial, Middletown Orange County	10	yes	yes	some	yes	8
Phelps Memorial, N. Tarrytown Westchester County	8	no	yes	no	yes	0
New Rochelle Hospital Medical Center, Westchester County	10	DK	yes	some	yes	4
Cornwall Hospital Orange County	10	yes	yes	yes	yes	-
St. Joseph's Hospital Yonkers, Westchester County	8	DK	yes	yes	no	2
St. John's Riverside Yonkers, Westchester County	4	yes	yes	yes	yes	6
United Hospital, Port Chester Westchester County	8	no	DK	DK	no	4
Peekskill Community Hospital Westchester County	9	yes	yes	yes	yes	10
St. Francis Hospital Port Jervis, Orange County	10	no	DK	DK	no	4
Westchester County Medical Cntr. Valhalla	60/hr	yes	yes	yes	yes	-

DK=don't know

- = no response

TABLE I-B

RESPONSES OF 11 HOSPITALS TO TELEPHONE INTERVIEWS

Hospital		Emergency Dept. Patient Capacity	Radiation Training?	Radiation Survey Equipment?	Protective Equipment?	Decontamination Facilities?
Arden Hill Hospital, Goshen Orange County	3	no	yes	no	yes	
Nyack Hospital Rockland County	10-50	yes	yes	yes	yes	
Tuxedo Memorial Hospital Orange County	3-5	yes	yes	yes	yes	
St. Luke's Hospital Newburgh, Orange County	8-10	yes	yes	yes	yes	
Putnam Community Hospital Carmel, Putnam County	3	no	no	no	no	
Good Samaritan Hospital Suffern, Rockland County	5-10	yes	yes	yes	yes	
Julia Butterfield Hospital Cold Spring, Putnam County	3	no	yes	no	no	
Mt. Vernon Hospital Westchester County	3	yes	yes	yes	yes	
St. Anthony Community Hosp. Orange County	8-10	yes	yes	yes	yes	
White Plains Medical Center Westchester County	5-6	yes	yes	yes	yes	
Northern Westchester Hospital Mt. Kisco, Westchester County	10	yes	no	yes	yes	

TABLE I-C

SUMMARY OF 24 HOSPITAL EMERGENCY DEPARTMENT RESPONSES

Does staff of department have training in the treatment of radiation injury and patient decontamination?

YES 14 (58%) NO 8 (33%) DON'T KNOW 2 (8%)

Does department have radiation survey equipment?

YES 19 (79%) NO 2 (8%) DON'T KNOW 3 (13%)

Does department have protective equipment?

YES 16 (67%) NO 6 (25%) DON'T KNOW 2 (8%)

Does department have decontamination facilities?

YES 18 (75%) NO 6 (25%) DON'T KNOW 0

Respondent self-evaluation of preparedness to respond effectively to a major radiological emergency (on the 0-10 scale).
Eleven responses.

0-2 3
3-4 4
5-6 1
7-8 2
9-10 1

HOSPITAL EMERGENCY DEPARTMENTS

St. Agnes Hospital, White Plains, Westchester County, is approximately 15 miles from Indian Point. It can handle 4 major trauma victims at one time in its emergency department. One physician staffs the department at all times with 4 nurses during the day, 3 on evenings and 1 at night. None has had in-service training on the management of ionizing radiation injury; the Director reports that 4 physicians and 2 nurses are competent in managing ionizing radiation injury and decontamination procedures.

There is a written protocol for decontamination procedures but it has never been practiced. There is also a written protocol for the management of major radiological disaster but it has not been practiced.

The Director has no knowledge of the department's role in response to an emergency at Indian Point. There are no decontamination showers or supplies necessary for radiation treatment and decontamination. The Director does not know if there are any radiation survey instruments.

On a scale of 0 to 10, the Director rated facility preparedness as 1. NYPIRG is in agreement with this assessment.

Yonkers General Hospital, Yonkers, Westchester County, is approximately 25 miles from Indian Point. It can treat 2 major trauma victims at one time and has a total capacity of 5 patients in its emergency department. Two physicians staff the department during the day with 1 physician in the evening and night shifts. There are 4 nurses in the day, 2 in the evening and 1 at night.

The in-service training for staff on the management of radiation injury and patient decontamination consists of one 2-hour lecture held September 2, 1981 and attended by 2 physicians, 6 nurses and 8 support staff. Three physicians and 6 nurses are reported competent in treating radiation injury and decontamination procedures.

Decontamination procedures and radiological disaster plans were practiced once on September 4, 1981. Three physicians, 6 nurses and 10 support staff participated.

The Director does not know the department's role during a radiological emergency and reports that contaminated patients would probably need to be transferred to another hospital if they had contaminated wounds. The department has showers for decontamination procedures but it has no protective clothing for workers nor any personnel dosimeters. The department has one gamma/beta detector.

The Director rated facility preparedness 7 on the 0 to 10 scale. However, due to the lack of equipment, this is a generous assessment.

Doctors Sunnyside Hospital, Port Jervis, Orange County, is approximately 40 miles from Indian Point. It has a total patient capacity of one in its Emergency Department. It was stated that "15 patients have been treated during disaster drills."

One physician and 1 nurse staff the department at all times. The staff has had no in-service training on the management of radiation injury and patient decontamination.

One physician, 2 nurses and 2 support staff have each had 12 hours of Civil Defense training. One X-ray technician has ongoing nuclear medicine training. One physician and 1 X-ray technician are considered competent in radiation treatment and decontamination. Neither decontamination procedures nor radiological disaster plans have been practiced. The department's role in a response to a radiological emergency is unknown to the Director.

It is stated that patients with radiation injury would need to be transferred to another hospital. There are no decontamination showers but hosing facilities exist immediately outside the hospital. The department does have protective clothing and personnel dosimeters for the workers. There are 4 gamma/beta survey instruments.

On the 0 to 10 scale, facility preparedness is given a 3 by the Director. NYPIRG concurs with this assessment.

Horton Memorial Hospital, Middletown, Orange County, is approximately 30 miles from Indian Point. It has 1 physician on staff in the Emergency Department at all times with 2 between 6:00 and 10:00 p.m. There are 4 nurses on duty at all times.

Radiation injury treatment and decontamination procedures were practiced in May 1979, September 1980, and March 1982. In addition, 5 Emergency Medical Technicians have had 15 hours of training in radiological monitoring.

All physicians, nurses and EMT's are considered competent in radiation treatment and decontamination. Decontamination procedures and radiological disaster management were practiced in June 1981 and March 1982.

The department has decontamination showers with a holding tank and protective clothing for workers. There are no personnel dosimeters. Radiation survey instruments are available from the Nuclear Medicine Department (2) and from the laboratory (1).

The Director reports that the department could adequately care for 10 victims of radiological emergencies and on the 0 to 10 scale rates the facility preparedness as an 8.

NYPIRG would not dispute this rating if no more than 15 patients require treatment. Greater numbers than this would tax the facility beyond its capacity.

Phelps Memorial Hospital, Tarrytown, Westchester County, is approximately 15 miles from Indian Point. It has a capacity of 8 patients and can treat 3 major trauma patients at one time in its Emergency Department. There is one physician on staff in the Emergency Department at all times with 5 nurses during the day, 4 in the evening and 2 at night.

The staff has received no in-service training on the management of radiation injury and decontamination. No staff member is considered competent in managing radiation injury and decontamination. Decontamination procedures and radiological disaster plans have never been practiced. The department

has decontamination showers which drain into the Hudson River. There is no protective clothing or personnel dosimeters for the workers. There are 2 radiation survey instruments in the Radiology Department.

On the 0 to 10 scale, the Director assesses the facility preparedness at 0. NYPIRG concurs with this evaluation.

(Note: This hospital appears on a New York State Department of Health list of facilities considered able to provide treatment for radiologically contaminated individuals.)

New Rochelle Hospital Medical Center, New Rochelle, Westchester County, is approximately 25 miles from Indian Point. It has 8 treatment rooms in its Emergency Department and 3 holding beds. It can treat 3 patients at one time under standard operating procedures and 10 patients during disaster drills.

One physician staffs the department all the time with 2 house staff as back-up. There are 4 nurses during the day and evening and 2 during the night.

The Director did not know if the staff had had in-service training on the management of radiation injury and decontamination. The Director stated during a phone call on June 2, 1982 that there was no one on staff who was an "expert" on radiation injury and decontamination.

Decontamination procedures and radiological disaster plans have never been practiced. The department's role in a response to a radiological disaster at Indian Point is unknown to the Director.

There is one decontamination shower with no holding tank. The Director did not know of any protective clothing for workers. There are 4 personnel dosimeters and 2 Geiger/Mueller counters available.

The Director assesses the facility preparedness as 4 on the 0 to 10 scale. Due to the absence of training and procedural familiarity as well as any staff competent in the treatment and decontamination of radiation victims, NYPIRG considers this hospital inadequate to the task of responding to a major radiological disaster at Indian Point.

(Note: This hospital is listed in the Westchester Radiological Emergency Response Plan as being a facility that is able to treat victims of a radiological emergency.)

Cornwall Hospital, Cornwall, Orange County, is approximately 15 miles from Indian Point. It has a total capacity of 10 patients in its Emergency Department. Three major trauma victims can be treated at one time.

One physician staffs the department at all times, with 3 nurses during the day, 2 in the evening and 1 at night. There is annual in-service training for radiation treatment and injury which involves all staff.

The Director states that the department is "totally prepared to treat 1-3 contaminated patients." He adds "... our competence with a larger amount of patients is unknown." There have been 3 separate drills for radiological disaster response and decontamination of victims. No dates for these drills were given.

Facilities for washing down contaminated patients and holding the water for later disposal do exist. Protective clothing and dosimeters are available for workers. There are 5 radiation survey instruments. The Director ended his statement with "My only concern is the number of patients we could handle efficiently. Certainly 1 to 3 patients, but more than that I don't know."

It is clear that this department is well equipped and trained to deal with victims of a major radiological disaster if only 3 victims appear at the hospital. NYPIRG accepts the Director's report that above this number, this facility could prove to be inadequate to the task.

St. Joseph's Hospital, Yonkers, Westchester County, is approximately 25 miles from Indian Point. It has a total capacity of 8 patients in its Emergency Department and can treat 4 major trauma patients at one time.

Three physicians staff the department in the day, 2 in the evening and 1 at night. There are 3 nurses during the day and evening and 2 at night. The Director doesn't know if the staff has had in-service training on radiation injury and decontamination, and also doesn't know any staff that are competent in treating radiation injury and decontaminating patients. The Director doesn't know if decontamination procedures and radiological disaster plans have ever been practiced.

There are no decontamination showers available and all protective clothing and personnel dosimeters are in the Radiology Department. There is one Geiger/Mueller counter in Radiology.

The Director rates the facility's preparedness as 2 on the 0 to 10 scale. In light of the absence of training and lack of facilities, this evaluation of 2 is somewhat generous.

St. John's Riverside Hospital, Yonkers, Westchester County, is approximately 25 miles from Indian Point. It has a total capacity of 4 patients in its Emergency Department. Three major trauma patients can be treated at one time. Two physicians staff the department during the day and evening; there is 1 during the night. There are 3 nurses during the day, 2 in the evening and 1 at night.

Three physicians and 2 nurses received 2 hours of training in Radiation Safety Procedures in 1979. Three physicians, 15 nurses, and 5 support staff received 1 hour of training for emergency management of radiation accidents in 1981. One nurse received 7 hours of training on Mass Evacuation Procedures with Related Public Health Problems in 1979. Five physicians, 10 nurses, and 5 support staff are considered competent in managing radiation injury and decontamination.

Decontamination procedures have never been practiced; there is no written protocol for responding to a major radiological disaster.

There are two decontamination showers but the holding tank system is under construction with completion date unknown. Protective clothing and 10 personnel dosimeters are available for workers; there are 2 radiation survey instruments.

The Director rates facility preparedness as a 6 on the 0 to 10 scale. Because decontamination procedures have never been practiced, NYPIRG has reservations about rating this department as high as 6.

United Hospital, Port Chester, Westchester County, is approximately 25 miles from Indian Point. It can treat 8 major trauma patients at one time in its Emergency Department. One physician is on duty at all times, with 4 nurses during the day and evening and 3 at night.

The staff has had no in-service training in the management of radiation injury or decontamination, but the Director reports that 3 physicians and 4 nurses are competent in this area. Decontamination procedures and a radiological disaster response plan have never been practiced, even though the Director is aware of the hospital's role in the proposed Indian Point response plan.

There are no decontamination showers, protective clothing, or personnel dosimeters for workers and the Director does not know if radiation survey instruments are available. Facility preparedness is rated 4 on the 0 to 10 scale by the Director. The lack of equipment and training causes us to object to a rating as high as 4.

(Note: This hospital is listed in the Westchester Radiological Emergency Response Plan as a facility for treatment of radiological disaster victims.)

Peekskill Community Hospital, Peekskill, Westchester County, is approximately 2 miles from Indian Point. It is one of the best equipped facilities in the area to deal with radiological emergency because of its agreement with the Indian Point utilities to treat radiation victims from onsite at the plants. The utilities have provided personnel and training to assist in preparedness over a period of several years. The staff has training and practical experience in the treatment of radiation injury and decontamination.

NYPIRG had difficulty, however, in obtaining this information. The Emergency Department Director refused to complete the survey. In fact, he stated that he threw the survey out upon receipt. Three weeks of persistent phone calls produced a partially-completed survey from the administration, and a phone conversation with an administrator provided information on the hospital's preparedness. The facility rated itself at 10 on the 0 to 10 scale for facility preparedness.

NYPIRG will not question this evaluation, but will only point out that this facility is within 2 miles of Indian Point and would be evacuated in the event of a major radiological disaster.

St. Francis Hospital of Port Jervis, Orange County, is approximately 40 miles from Indian Point. It has a capacity of 5 beds but could treat 10 major trauma patients at one time in its Emergency Department. There is 1 physician on duty throughout a 24-hour period with 3 nurses during the day, 2 in the evening and 1 through the night.

The staff has received no in-service training on the management of radiation injury and patient decontamination although 1 physician and 2 nurses are considered competent in managing radiation injury and decontamination.

The Emergency Department has no decontamination showers and the Director did not know if there were radiation survey instruments, personnel dosimeters, or protective clothing for workers. On the 0 to 10 scale, facility preparedness to respond to a major radiological emergency was rated 4 by the Director.

Westchester County Medical Center, Valhalla, is approximately 15 miles from Indian Point. It appears to be the best prepared facility in the area for responding to a major radiological disaster. An administrator stated a capacity of 30 patients per hour in its Emergency Department, with an ability to double this capacity in extreme circumstances.

There are 3 physicians on duty through the 10-hour day shift and 2 physicians on duty through the 14-hour night shift. There are 4-5 nurses on duty throughout the 24-hour period.

It was stated that the staff has received training on the management of radiation injury and patient decontamination. Five physicians and 21 nurses are considered competent in this area.

The Emergency Department has radiation survey instruments, personnel dosimeters and protective clothing for the staff. There are decontamination showers, though there are no holding tanks for the storage and proper disposal of water used to decontaminate individuals.

Staff preparedness to manage a major radiological disaster is rated 10 on the 0 to 10 scale.

(Note: This facility is listed in the Westchester County Radiological Emergency Response Plans as a facility for the treatment of radiological disaster victims.)

The following hospitals responded to telephone interviews:

Arden Hill Hospital, Goshen, Orange County, is approximately 25 miles from Indian Point. It is prepared to respond only to radiological emergencies of the most local type, e.g., a traffic accident involving a truck carrying medical isotopes, according to an administrator. It was his assumption that the hospital would accept non-radiological patients from other hospitals so that those hospitals would be free to provide radiological treatment.

(Note: This facility appears in the Orange County Radiological Emergency Response Plan as a hospital providing radiological treatment.)

Nyack Hospital, Rockland County, is approximately 15 miles from Indian Point. It has the staff, training, and equipment to provide treatment to 10 to 50 victims of a radiological disaster, according to the administrator of Radiology. Numbers beyond this would tax the facility's ability to effectively respond.

(Note: This facility appears on a list from the New York State Department of Health as a hospital providing radiological treatment.)

Tuxedo Memorial Hospital, Orange County, is approximately 15 miles from Indian Point. It has a radiological emergency response plan which was developed in conjunction with the Union Carbide Company in Sterling Forest, which maintains a small nuclear reactor for the production of medical radioisotopes, according to the administrator of the facility. This facility was reported to be able to provide effective treatment for 3 to 5 victims of a radiological accident. Numbers beyond this would tax the facility beyond its capacity to respond effectively.

St. Luke's Hospital, Newburgh, Orange County, is approximately 15 miles from Indian Point. It has the staff, training, and equipment to provide emergency radiological treatment to 8 to 10 patients, according to the administrator of the X-ray Department. Numbers exceeding this would tax the facility beyond its capacity to respond effectively.

Putnam Community Hospital, Carmel, Putnam County, is approximately 15 miles from Indian Point. It has no radiological emergency response plan, according to the Director of Nursing. An in-house Disaster Committee is presently in the process of developing such a plan. It was stated that any radiological accident victim would be stabilized and transferred to the Westchester County Medical Center in Valhalla.

Good Samaritan Hospital, Suffern, Rockland County, is approximately 15 miles from Indian Point. The Radiation Safety Officer at this facility reports that there is a radiological response plan for local emergencies such as highway accidents or problems at the nearby Union Carbide reactor, used in the manufacture of medical radioisotopes. This facility could treat 1 acutely injured and contaminated individual until transfer arrangements to another facility could be made. This facility, as reported, could decontaminate and treat 5 to 10 patients in less than an acutely serious condition.

(Note: This facility appears on a New York State Department of Health list of hospitals providing radiological treatment.)

Julia Butterfield Hospital, Cold Spring, Putnam County, is approximately 12 miles from Indian Point. The chief X-ray technician states that this facility has a radiation survey instrument and personnel dosimeters, but no one on staff has special training in treatment of radiation injury or decontamination procedures. He stated that the Emergency Department has a capacity of 3 major trauma patients.

Mt. Vernon Hospital, Westchester County, is approximately 25 miles from Indian Point. The Director of Nuclear Medicine states that this facility has the capacity to treat 3 victims of a major radiological accident. Numbers exceeding this would tax the facility beyond its capacity to respond adequately.

St. Anthony Community, Warwick, Orange County, is approximately 20 miles from Indian Point. The administrator of this facility stated that there are usually 8 to 10 beds available at any given time and that this would be the facility's capacity to respond. There is the equipment and the trained staff needed to respond according to his statements.

White Plains Medical Center, Westchester County, is approximately 20 miles from Indian Point. According to the Assistant Executive Director, this facility has outside hosing facilities, and some trained staff for responding to a major radiological emergency. It was stated that this hospital has the capacity to treat 5 to 6 victims of a major radiological accident.

Northern Westchester Hospital, Mt. Kisco, is approximately 15 miles from Indian Point. An administrator from this facility reports that there is an all-purpose disaster plan which is presently in place and operative. There are no radiation survey instruments within the hospital but such instruments are immediately available from a "private source." This "private source" would also supply personnel dosimeters to augment those already in the Radiology Department. Members of the hospital staff have been trained in the treatment of radiation injury and patient decontamination. The administrator could not quantify the capacity of emergency services, but stated, "If we had 10 major trauma patients, we'd be very busy."

Dobbs Ferry Hospital, Westchester County, is approximately 15 miles from Indian Point. An administrator from this facility refused to respond to our survey or inquiries.

Keller Army Hospital, West Point Military Academy, is approximately 15 miles from Indian Point. NYPIRG was unable to obtain a response from this facility.

PART II

EVACUATION/RELOCATION PLANS FOR THE RESIDENTIAL HEALTH-CARE FACILITIES WITHIN THE TEN-MILE EMERGENCY PLANNING ZONE

All hospitals and extended care facilities within the ten-mile Emergency Planning Zone have been given a plan for the evacuation and relocation of their patients in the event of a radiological emergency at Indian Point, as outlined in the Radiological Emergency Response Plan for each county.

Questionnaires were sent to the 36 facilities that were listed in the proposed Radiological Emergency Response Plans to ascertain their ability to evacuate and relocate their patients.

Of 36 questionnaires mailed out, 13 (36%) were returned and one site visit was made. Telephone surveys were conducted for 18 additional facilities. These provided less extensive information than the returned questionnaires, but are useful for evaluation nonetheless. These additional responses brought the total responses to 32 (88% response rate).

TABLE II-A

RESPONSES TO NYPIRG QUESTIONNAIRE FROM 13 RESIDENTIAL

HEALTH-CARE FACILITIES WITHIN THE 10-MILE EMERGENCY PLANNING ZONE

Facility	# patients	Capacity of facil. vehicle	Evac/Relocat. Plan?	Add. transport guaranteed?	0-10 self-rating of plan
Marrs Extended Care Facility Mohegan Lake, Westchester County	120	0	yes	no	0
Laurel Manor Adult Home Spring Valley, Rockland County	35	16	yes	no	9
Briar Crest Nursing Home Ossining, Westchester County	86	5	yes	no	0
Tolstoy Foundation Nursing Home Company, Inc. Valley Cottage, Rockland County	96	4	yes	no	-
Westledge Extended Care Center Peekskill, Westchester County	100	0	yes	no	0
Garnerville Home Rockland County	37	22	no	no	-
Cedar Manor Extended Nursing Care Ossining, Westchester County	153	4	no	no	-
Julia Butterfield Hospital Cold Spring, Putnam County	36	0	no	no	-
Bethel Methodist Home Ossining, Westchester County	190	14	yes	no	0
Danish Home for the Aged Croton, Westchester County	24	24	yes	yes	10
The Country House in Westchester Yorktown Heights, Westchester Co.	90	19	yes	no	1-9*
Maryknoll Sisters Nursing Home Maryknoll, Westchester County	56	5	yes	no	5
Victoria Home Ossining, Westchester County	35	0	yes	no	4

* respondent rated the plan 1 "without improved advance warning" and 9 "with improved advanced warning."

TABLE II-B

RESPONSES TO NYPIRG TELEPHONE INTERVIEWS FROM 19 RESIDENTIAL
HEALTH-CARE FACILITIES WITHIN THE 10-MILE EMERGENCY PLANNING ZONE

Facility	# patients	capacity of facil. vehicles	Evac/Relocat. Plan?	Add. transport guaranteed?	0-10 self-rating of plan
Mohegan Manor Home for Adults Mohegan Lake, Westchester County	150	30	no	no	0
Falkirk Hospital Central Valley, Orange County	60	-	no	no	-
Friedwald House New City, Rockland County	180	-	-	no	0
Nyack Manor Nursing Home Valley Cottage, Rockland County	160	-	yes	no	6
Venture North Thiells, Rockland County	14	14	no	yes	-
Greer-Woodycrest Children's Service Pomona, Rockland County	89	89	yes	yes	-
Rockland County Infirmary/Summit Park Hospital, Pomona, Rockland Co.	460	-	yes	no	0
Green Hill Home for Adults Haverstraw, Rockland County	155	0	yes	no	-
Brandywine Nursing Home Briarcliff Manor, Westchester County	120	8	yes	no	-
Riverside Nursing Home Haverstraw, Rockland County	100	*	yes	*	-
Sleepy Hollow Nursing Home Briarcliff Manor, Westchester County	33	0	yes	no	-

* facility presently relying on staff to use their own cars for evacuation of patients

- = no information given

TABLE II-B -- Continued

Facility	# patients	capacity of facil. vehicles	Evac/relocat. Plan?	Add. transport guaranteed? self-rating of plan	
Asthmatic Children's Foundation Ossining, Westchester County	36	36	yes	yes	-
Cortlandt Nursing Care Center Peekskill, Westchester County	120	-	yes	no	-
Stony Lodge Hospital Ossining, Westchester County	61	61	yes	yes	-
St. Christopher's Inn Graymoor, Putnam County	135	20	no	no	-
New Hope Manor Graymoor, Putnam County	45	45	no	yes	-
Mother Lurana Home Graymoor, Putnam County	25	0	no	no	-
FDR Veterans Administration Hospital Montrose, Westchester County	1200	-	no	no	-
Letchworth Village Developmental Center Theills, Rockland County	1900	814	yes	no	-

- = no information given

TABLE II-C

SUMMARY OF RESPONSES FROM 32 RESIDENTIAL

HEALTH-CARE FACILITIES WITHIN THE 10-MILE EMERGENCY PLANNING ZONE

Total number of reported patients needing evacuation/relocation 6,101

Total reported capacity of facilities' vehicles 1,230 (20% of total)

Does facility have an evacuation/relocation plan?

YES 21 (65%) NO 11 (34%)

Does facility have the necessary transportation for evacuation?

YES 6 (18%) NO 26 (82%)

Number of facilities requiring additional transport vehicles for evacuation

26 (82%)

Number of facilities with additional transport guaranteed

0

Respondents' self-evaluation of preparedness to evacuate and relocate in the event of a radiological emergency (on the 0-10 scale). Ten responses.

0-2	<u>6</u>
3-4	<u>1</u>
5-6	<u>1</u>
7-8	<u>0</u>
9-10	<u>2</u>

SELF-DESCRIPTIONS OF RESIDENTIAL HEALTH-CARE FACILITIES
WITHIN THE TEN-MILE EPZ

Marrs Extended Care Facility, Mohegan Lake, Westchester County. This facility has a total of 120 patients; 5 are ambulatory, 85 require wheelchairs, and 30 require stretchers. The facility has a plan for the relocation of the patients in the event of a radiological emergency. According to this plan, all patients will be taken to the Loving Hills Care Center in Pawling, New York, with whom the facility has a written agreement.

All staff members on duty at the time are designated to remain and direct the relocation. If an insufficient number of staff members remain, the facility has no alternate staffing plan. No arrangements have been made for the transportation of the patients to the Loving Hills Care Center. The facility owns no vehicles. It is the respondent's understanding that the state will provide the vehicles.

On the 0-10 scale, the respondent rates the adequacy of this plan for the relocation as 0.

Laurel Manor Adult Home, Spring Valley, Rockland County. This facility has a total of 35 patients, all of whom are ambulatory. The facility's relocation plan provides that the patients be taken to Nyack Hospital, Good Samaritan Hospital in Suffern, New York, and Rockland State Center, with whom the facility has an oral agreement.

Five staff members are designated to remain and direct the relocation. If an insufficient number of staff remain, the facility has no alternate staffing plan. Arrangements have been made for transportation of patients to the receiving facilities. In addition to the three vehicles owned by the facility, which have a total patient capacity of 16, four other vehicles will be utilized. These additional vehicles are a bus provided by Harran, a mini-bus provided by Pomona, a paramedics vehicle provided by Mohawk, and an ambulance provided by Spring Valley. The facility does not have written agreements with the providers and doesn't know who will pay for the transportation.

On the 0-10 scale, the respondent rates the adequacy of this plan as 9. Based on the other responses in the survey, the plan is inadequate and does not merit this high rating. Also, the responses contradict what is stated in the Radiological Emergency Response Plan (RERP) for Rockland County. According to the RERP, the patients from this facility are to be taken to the Elmwood Park Memorial School in New Jersey. Clarkstown Minibus has been designated in the RERP to provide one mini-bus to transport the patients to the school. The obvious lack of communication which caused this discrepancy is a serious problem.

Briar Crest Nursing Home, Ossining, Westchester. This facility has a total of 86 patients; 10 are ambulatory and 76 require wheelchairs. The respondent states that the facility has a plan for the relocation of the patients in the event of an emergency resulting from a radiological release at Indian Point. According to this plan, the patients will be taken to Phelps Memorial Hospital in Tarrytown and Tarry Hall Nursing Home, with whom the facility has a written agreement.

Fifteen staff members are designated to remain and direct the relocation. If an insufficient number of staff members remain, there is a list of employees to call in the Administrative Secretary's office. Arrangements have been made for transportation of patients to the receiving facilities. In addition to the one vehicle owned by the facility, which has a total patient capacity of five, an unknown number of ambulances will be provided by the Ossining Volunteer Ambulance Corps. The facility does not have a written agreement and states that the Corps will provide the transportation at no cost.

On the 0-10 scale, the respondent rates the adequacy of this plan as 0.

Tolstoy Foundation Nursing Home Company, Inc., Valley Cottage, Rockland County. This facility has a total of 96 patients; 22 are ambulatory, 68 require wheelchairs, and 6 require stretchers. According to the facility's relocation plan, the patients will be taken to Nyack Hospital and Elmwood Manor Nursing Home in Nanuet, New York, with whom the facility has written agreements.

Eight staff members are designated to remain and direct the relocation. If an insufficient number of staff members remain, the facility has no alternate staffing plan. The respondent did not know if arrangements have been made for the transportation of patients to the receiving facility. The facility owns only one vehicle which can transport four patients.

The respondent did not rate the adequacy of this plan but it is obviously inadequate to the task. Also, this plan contradicts the RERP for Rockland County. According to the RERP, the patients from this facility are to be taken to the Elmwood Park Memorial School. The obvious lack of communication which caused this discrepancy is of major concern.

Westledge Extended Care Center, Peekskill, Westchester County. This facility has a total of 100 patients; 16 are ambulatory, 66 require wheelchairs, and 18 require stretchers. According to the relocation plan, the patients will be taken to Northern Westchester Hospital, Salem Hills Health-related Facility in Purdys, and Kent Nursing Home in Luddingtonville, with whom the facility has written agreements. As alternate arrangements, 58 patients would be taken to a holding center for a short time.

The respondent does not know how many staff members are designated to remain and direct the relocation. No arrangements have been made for the transportation of patients to the receiving facility. The facility owns no vehicles and would need an auto or mini-bus, ambulettes, and 9 ambulances to transport its patients.

On the 0-10 scale, the respondent rates the adequacy of this plan for the relocation of patients as 0.

Garnerville Home, Garnerville, Rockland County. This facility has a total of 37 patients, all of whom are ambulatory. The facility owns three vehicles with a total capacity of 22. The facility has no plan for the relocation of patients in a radiological emergency.

Cedar Manor Extended Nursing Care Center, Ossining, Westchester County. This facility has a total of 153 patients; about half are ambulatory, 42 require wheelchairs, and 26 require stretchers. There is said to be no plan for the emergency relocation of patients in the event of a radiological emergency. Contradicting this response, it is stated that patients would be taken to Phelps Memorial Hospital, Tarrytown Hall and Tibetts in White Plains, with which the facility has a written agreement.

No staff members are designated to remain and direct the relocation. The respondent didn't know if arrangements have been made for the transportation of patients to the receiving facilities. The facility owns one vehicle with a capacity of 4 patients.

The respondent stated that "transportation and other arrangements were by directive of New York State Department of Health arranged by another agency."

Julia Butterfield Memorial Hospital, Cold Spring, Putnam County. This facility has a total of 36 patients, and has no plan for their relocation in the event of a major radiological release from the Indian Point reactors.

The Bethel Methodist Home, Ossining, Westchester County. This facility has a total of 190 patients. The facility's relocation plan provides that patients will be taken to the following places: Phelps Memorial Hospital, North Tarrytown; Miriam Osborne Home, Rye; Methodist Church Home, Bronx and Brooklyn, NY. The facility has a written agreement with these places.

Those staff members on duty during the shift are designated to remain and direct the relocation. The facility can provide immediate transportation for 14 of the 190 patients. No arrangements have been made for other vehicles to transport patients to relocation centers. Local families will be asked to take their own family member.

On the 0-10 scale, adequacy of the relocation plan was given a 0 by the respondent.

Danish Home for the Aged, Inc., Croton, Westchester County. This facility has a total of 24 patients, of which only one is presently wheelchair-bound. In the facility's plan, patients will be relocated to the Westchester County Center in White Plains, which has a written agreement with the facility.

This facility has an adequate number of vehicles to relocate all patients in one trip. On the 0-10 scale, the adequacy of the relocation plan is rated as 10 by the respondent.

The Country House in Westchester, Yorktown Heights, Westchester County. This facility has 100 beds and averages 90 patients in residence. The vehicles owned by this facility have a capacity of 19. The respondent states that Parsons Brinkerhoff (the consulting firm that drafted the emergency response plans) had informed the facility that patients would be relocated to the Westchester County Center in White Plains, NY. There was no written agreement but this plan was reported to be listed on a computer printout.

The respondent stated that Parsons Brinkerhoff had advised the facility that buses will be available for transport. There is no written agreement

between this facility and any providers of transportation. Some patients have family in the immediate area and could be relocated by them.

On the 0-10 scale for relocation adequacy, a 1 is given by the respondent "without improved advance warning" and a 9 is given "with improved advance warning."

Maryknoll Sisters Nursing Home, Maryknoll, Westchester County. This facility averages 56 patients at one time, with approximately 40% ambulatory and 60% non-ambulatory. The facility owns one vehicle with a capacity of five patients. The relocation plan would send patients to Phelps Memorial Hospital in North Tarrytown, Westchester County Medical Center in White Plains, and St. Joseph's Medical Center in Yonkers, New York. There is a written agreement with these facilities.

No arrangement for the transportation of patients to these facilities has been made. On the 0-10 scale for relocation adequacy, the plan is rated 5 by the respondent. Given the lack of planned transportation, this is a very generous evaluation.

Victoria Home, Ossining, Westchester County. This facility averages 35 patients in residence. There is a written agreement with the Methodist Church Home in the Bronx, New York, to provide a place for relocation in the event of a radiological emergency. This facility has no vehicles of its own to provide transport for relocation. The respondent rated the adequacy of the relocation plan 4 on the 0-10 scale, perhaps a bit too high for a relocation plan with no secure transport.

The following responses were received through telephone interviews:

Mohegan Manor Home for Adults, Mohegan Lake, Westchester County. This facility has 150 residents, all of whom are ambulatory. Three vans for transport are owned by the facility and it was reported that three buses have been promised by state representatives. The administrator attended one meeting on this issue but was never contacted afterward. There is no knowledge of the direct providers of the promised buses, or of where patients will be relocated in a radiological emergency. Relocation adequacy was given a 0 on the 0-10 scale by the administrator.

Falkirk Hospital, Central Valley, Orange County. This facility has 60 patients, all of whom are ambulatory. An administrator states that the facility has no plan for the evacuation and relocation of its patients in the event of a radiological emergency.

Friedwald House, New City, Rockland County. This facility has 180 patients, both ambulatory and wheelchair-bound. The administrator states that the facility would need to have transportation provided and assumes that the state would provide it. There is no agreement with a receiving facility.

Nyack Manor Nursing Home, Valley Cottage, Rockland County. This facility has 160 patients, with approximately 30% being ambulatory. The facility does have relocation plans; its patients will go to Rockland Residence, Brookhaven, and Nyack Hospital. It was reported that transportation for the relocation would have to be provided. Sources are as yet unknown.

Venture North, Thiells, Rockland County. This facility has 14 ambulatory patients. An adequate number of vehicles is owned for the evacuation of patients but a facility for relocation is presently unknown.

Greer-Woodycrest Children's Service, Pomona, Rockland County. This facility has 89 ambulatory patients. The facility has a plan for the evacuation and relocation of patients, and an adequate number of vehicles to do so.

Rockland County Infirmary, Pomona, Rockland County. This facility has 400 patients in the infirmary and 60 patients in the adjoining Summit Park Hospital. An administrator stated that transportation for the relocation of patients would be provided by the state in a manner that was not known to him. He stated that there are agreements with seven facilities that would receive the relocated patients although they could not be identified at the time of the phone call. Relocation adequacy was rated 0 on the 0-10 scale by the administrator.

Green Hill Home for Adults, Haverstraw, Rockland County. This facility has 155 patients, all of whom are ambulatory. There is a relocation plan for this facility -- patients will go to Rockland Psychiatric Center. However, there is only an oral agreement. Furthermore, this facility does not own vehicles to transport its patients and does not know how transportation will be provided.

Brandywine Nursing Home, Briarcliff Manor, Westchester County. This facility has 120 patients, including both wheelchair-bound and ambulatory patients. It owns only one station wagon for the relocation of its patients and is consequently dependent upon New York State for the provision of transportation. It was not stated how the necessary transport would be provided. There is an agreement with a receiving facility (unspecified).

Sleepy Hollow Nursing Home, Haverstraw, Westchester County. This facility has 100 patients; 30% are ambulatory, the remainder require wheelchairs. In the event of a radiological emergency, patients would go to Nyack Hospital and two other nursing homes. There are written agreements with each facility. The facility owns no vehicles, however, and is presently relying on cars owned by the staff to evacuate and relocate its patients.

Asthmatic Children's Foundation Residential Treatment Center, Ossining, Westchester County. This facility has 36 patients. The administrator of the facility states that patients will relocate to Blythedale Children's Hospital in Valhalla in the event of a radiological emergency. There is a written agreement for this plan. The facility has the vehicles needed to implement the evacuation plan which is considered totally adequate by the administrator.

Cortlandt Nursing Care Center, Peekskill, Westchester County. This facility has 120 patients. There is written agreement for relocation of patients in the event of a radiological emergency. However, the facility does not have the required transport vehicles to implement this plan. The administrator stated that transportation was promised to them by government officials. Without the promised transport, the plan is considered totally inadequate.

St. Christopher's Inn, Graymoor, Putnam County. This facility provides temporary housing for homeless men. At any one time there are 120-150 residents. There are vehicles to relocate 20 residents. The administrator stated that there is no evacuation/relocation plan for a radiological emergency and that the facility has not been contacted by any officials since the March, 1982, drill of the proposed Radiological Emergency Response Plan.

New Hope Manor, Graymoor, Putnam County. This facility provides residential rehabilitation to approximately 45 substance-dependent females. The facility owns the vehicles necessary to relocate its clients, but the administrator does not know where the clients would go. The facility has no present evacuation/relocation plan in the event of a major radiological emergency.

Mother Lurana Home, Graymoor, Putnam County. This facility provides residential nursing care to 20-25 females. It has neither an evacuation/relocation plan in the event of a radiological emergency nor the vehicles to implement such a plan.

FDR Veterans Administration Hospital, Montrose, Westchester County. This facility provides residential care to 1200 physically and mentally handicapped Veterans. The administration and the chief safety engineer are unaware of any evacuation/relocation plan in the event of a radiological emergency.

Letchworth Developmental Village, Thiells, Rockland County. At the present time, the administration is in the process of developing its evacuation/relocation plans. An initial draft has been submitted to an overseeing department within the State Department of Mental Health. The plan that was submitted calls for the acquisition of vehicles from other state mental health institutions in the area.

A spokesperson from this facility refused to identify which institutions will be providing the additional vehicles or what distances the vehicles will have to travel. She stated that approval of the plan must first be given by the state and further revisions may be required. No estimate of the time involved in this process was given. At the present time, this facility has the capacity to transport 814 (43%) of its 1900 patients.

The evacuation and relocation of the patients of Letchworth Village Developmental Center would be a logistical nightmare. This facility cares for only the most severely mentally and physically handicapped individuals. It has a large clientele, 1900, which makes it the largest institution of its kind in the United States. There are many residential buildings covering an expansive area. These factors render it impossible to evacuate and relocate in any reasonable length of time in the event of a radiological emergency.

PART III

AMBULANCE SERVICES IN THE FOUR COUNTIES SURROUNDING INDIAN POINT

The proposed Radiological Emergency Response Plans call for ambulance services to be mobilized to evacuate residents of hospitals, nursing homes, and others needing specialized transport for evacuation from within the ten-mile radius EPZ. Ambulances will no doubt also be used for the transport of the injured of a radiological disaster.

We surveyed the 96 ambulance services in Orange, Putnam, Rockland, and Westchester Counties to assess their ability to respond to a radiological disaster. We received 15 responses (16% of the total) to our questionnaire, a small number rendered significant by the fact that no respondent could be considered prepared to respond to a radiological emergency.

For a complete listing of results, refer to Tables III-A and III-B.

TABLE III-A

RESPONSES OF 15 AMBULANCE SERVICES

IN ORANGE, PUTNAM, ROCKLAND, AND WESTCHESTER COUNTIES

Ambulance Service	# members	# EMTs	# ambulances	Radiation Training?	Radiation Detect. Equipment?	# competent to treat radiation injury	# responding to rad. disas.	0-10 rating
Mohegan Vol. Fire Ass'n. Emergency Rescue and First Aid Squad Mohegan, Westchester County	60	16	2	no	no	0	0	0
Unidentified respondent* Westchester County	45	37	2	no	no	0	15	1
Horton Hospital Ambulance Service Middletown, Orange County	16	16	3	yes	no	3	16	4
Hudson Valley Ambulance Service Haverstraw, Rockland County	45	17	12	no	no	0	24	0
Irvington Volunteer Ambulance Corps (VAC) Westchester County	24	11	2	no	no	0	6	2
Ossining VAC Westchester County	74	54	2	no	no	0	5	0
Peekskill Community VAC Westchester County	40	35	4	no	no	4	6	0
Carmel VAC Putnam County	30	30	1	no	no	0	DK	0
North Salem VAC Westchester County	33	17	1	yes	no	0	10	1
Eastchester VAC Westchester County	34	16	2	no	yes	5	8	5

* questionnaire returned in envelope postmarked "Mt. Vernon"

DK = don't know

TABLE III-A -- Continued

Ambulance Service	# members	# EMTs	# ambulances	Radiation Training?	Radiation Detect. Equipment?	# competent to radiation injury	# responding to rad. disaster	0-10 rate
Elmsford Fire Department Westchester County	20	7	1	no	no	0	DK	4
Lewisboro VAC Westchester County	28	18	1	no	no	0	DK	0
Town of Harrison Police Dept. Westchester County	-	0	2	no	no	0	all	0
Garrison VAC Putnam County	40	18	1	DK	no	DK	-	-
North Tarrytown VAC	33	10	1	no	no	0	10	0

DK = don't know

- = no information given

TABLE III-B

SUMMARY OF RESPONSES FROM 15 AMBULANCE SERVICES

Total number of active members: 522

Total number of Emergency Medical Technicians (EMT): 312

Total number of Ambulances: 37

Ambulance Services whose members have received training in radiation injury treatment and decontamination: 2 (13%)

Ambulance Services with radiation detection equipment: 1 (7%)

Ambulance Services with written protocols (plans) for responding to a radiological emergency: 0

Ambulance Services aware of their role in the Indian Point Emergency Response Plan: 0

Total number of ambulance service members who are considered competent in managing radiation injuries and decontamination: 12 (2% of total)

Total number of reported ambulance service members who would respond in the event of a radiological disaster (in the judgement of service leader): 100 (19% of total)

Self-evaluation of preparedness to respond to a radiological disaster (on the 0-10 scale). Fourteen responses.

0-2	<u>11 (73%)</u>
3-4	<u>2 (13%)</u>
5-6	<u>1 (6%)</u>
7-8	<u>0</u>
9-10	<u>0</u>

ADDITIONAL INFORMATION ABOUT AMBULANCE SERVICES

Emergency Rescue and First Aid Squad, Mohegan Volunteer Fire Association, Inc., Mohegan Lake, Westchester County. The Ambulance Service states that it would transport victims to Peekskill Community Hospital. In the event of a radiological release, this hospital is to be evacuated.

Horton Memorial Hospital Ambulance Service, Middletown, Orange County. All 16 members have had some training relevant to the emergency response to ionizing radiation injury and/or decontamination procedures: two hours of EMT/AEMT courses and one hour of in-service training in 1981. Two radiological monitoring courses were attended by one person each and a radiological monitoring and instructor training course was attended by one person. They have practiced decontamination procedures, with 20 people participating in 1982. The respondent believed this plan to be feasible at this time. They have been notified by the Civil Defense in Orange County that they are to aid in the treatment, transport, and evacuation as directed by the Civil Defense.

They have from 20-50 of the essential items needed to provide emergency care to radiation victims (protective gloves, gowns, masks, shoe coverings and head covering, and blankets) but no personnel dosimeters or bags marked as radiological waste containers. They also have no radiation survey instruments. All 16 members would respond to an emergency resulting from a radiological release at Indian Point because, according to the respondent, they are a paid Ambulance Service, subject to mandatory recall.

Although this is the only Ambulance Service returning the survey from which any of the members have had any relevant training and had practiced any procedures, only three members are competent in the evaluation and treatment of radiation injury.

Peekskill Community Volunteer Ambulance Corps, Peekskill, Westchester County. The captain stated that the Corps was asked to participate in Con Edison's disaster drill on March 3, 1982, and that two members were asked to ger I.D.'s for the drill. In relation to the drill, four of them attended a "very basic briefing" at the Henry Hudson High School, and the Corps' headquarters was called on the morning of the drill and told to be on alert. They were not contacted again. The headquarters remained on alert until the Verplanck Fire Department was called to report that the drill had ended.

The captain stated that from 1-6 members would respond to an emergency resulting from a radiological release at the Indian Point reactors. "Most members, not knowing the basics of radiation, would head in the opposite direction for safety," according to the captain. It was also pointed out that victims would be transported to Peekskill Community Hospital, which, in the event of a radiological emergency, would be evacuated.

North Salem Volunteer Ambulance Corps, North Salem, Westchester County. Eighteen members participated in a two-hour Civil Defense presentation on radiation in December, 1981; seventeen participated in a drill in January, 1982.

Elmsford Fire Department, Westchester County. There are no radiation survey instruments and, aside from blankets and four personnel dosimeters, the department lacks all essential equipment needed to provide emergency care to radiation victims. The Chief said that he was unable to determine which members would respond in the case of a radiological emergency resulting from an accident at Indian Point. All in all, his rating of 4 on the preparedness scale may be a bit generous.

Garrison Volunteer Ambulance Corps, Putnam County. The respondent reported that during a radiological emergency, the ambulance corps would take patients to Peekskill Community Hospital. In the event of a major radiological emergency, however, this hospital would be evacuated as a result of its proximity to Indian Point.

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A NYPIRC- NYPIRG REPORT

READY OR NOT: Public Preparedness for an Accident at Indian Point



**A SURVEY OF WESTCHESTER COUNTY RESIDENTS
LIVING WITHIN 10 MILES OF THE
INDIAN POINT NUCLEAR POWER PLANTS.**

by Richard J. Altschuler with an introduction by Joan Holt

NEW YORK public interest RESEARCH CENTER, INC.

Offices: Albany, Binghamton, Brooklyn, Buffalo, Long Island, Manhattan, New Paltz, Queens, Staten Island, Syracuse, Utica

The New York Public Interest Research Group, Inc. (NYPIRG) is a not-for-profit non-partisan research and advocacy organization established, directed, and supported by New York State college and university students. NYPIRG's staff of lawyers, researchers, and organizers works with students in Albany, Binghamton, Brooklyn, Buffalo, Long Island, Manhattan, New Paltz, Queens, Staten Island, Syracuse and Utica. Staff and students work at learning citizenship skills and shaping public policy. Consumer protection, energy, fiscal responsibility, political reform and social justice are NYPIRG's principal areas of concern.

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NYPIRG, the state's largest consumer advocacy organization, established the Indian Point Project in the fall of 1979 to monitor safety conditions at the Indian Point nuclear reactors in Buchanan, New York, 24 miles north of New York City.

*** *** *** ***

Richard Altschuler, born August 5, 1942, is a sociologist, statistician, teacher, writer and editor. He has taught at Temple University, New York University and Queens College, and was chief data analyst and co-author (with Prof. S.M. Miller) of The Prospects for the Social Services, a study for the U.S. Department of Health, Education and Welfare. Since 1974, he has headed Statistics Made Simplest and Statistics for Business, supplying research and consultation services to many organizations and individuals. He is also the co-author of Open Reality (Putnam, 1974) and IC: An Introductory Exposition of Infinite Capitalism (Little Brown, 1972). Mr. Altschuler is currently writing Sociology, a college textbook, to be published next year by Harcourt Brace Jovanovich.

*** *** *** ***

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INTRODUCTION

When the Nuclear Regulatory Commission (NRC) appointed an Atomic Safety and Licensing Board to hold fact-finding hearings on the safety of the nuclear plants generating electricity in Buchanan, New York, NYPIRG formed a loose working partnership with the Union of Concerned Scientists (UCS), and both were accepted as intervenors in December 1981. During the next few months, representatives of UCS and NYPIRG laid plans and framed a series of contentions -- the major points we hoped to establish with the help of expert witnesses -- backing up our position that the two nuclear plants (operated by Con Edison and the Power Authority of the State of New York) should not be allowed to operate in the heart of a thickly populated area 35 miles from New York City. The initial and major thrust of the UCS/NYPIRG case is a detailed and many-sided demonstration that the emergency plans drawn up by the utilities' consultants for the four counties nearest the plants could not work.

An essential part of those plans was a 20-page booklet, "Indian Point, Emergency Planning, and You," which was prepared by the licensees and distributed early in 1982. By this device the utilities intended to supply vitally important information to everyone within the 10-mile "Emergency Planning Zone" (EPZ), the arbitrarily cut-off area around the plants targeted for emergency planning by the NRC and the Federal Emergency Management Agency (FEMA). Only by reading and remembering the information in this booklet could citizens find out (1) how they would be notified in case of a serious accident at Indian Point, (2) what they were supposed to do and not do, (3) how to get further information, (4) by what routes they were supposed to leave in case an evacuation should be ordered, (5) where they would be able to find their children if an accident occurred during school hours, and (6) where they were expected to go and for how long. The ten-mile circle was divided into 46 planning areas and a special edition of the booklet containing area-specific maps and instructions was prepared for each one that is inhabited. A very important addendum was a special postcard to be returned to the "Four County Nuclear Safety Committee," by anyone who might have difficulty in following the general guidelines -- e.g., because of sensory handicap, medical problem, old age, or transportation difficulties.

An important link in the chain of events between the discovery of an accident at Indian Point and public response is the network of sirens that are intended to alert people to turn on their radios for information. Originally supposed to have been fully operational by April 1, 1981, the sirens were not installed until the following year. The first attempt to activate the whole system was made on March 3, 1982 during a drill of the emergency plans for the four-county region. In that drill the sirens were the only means by which the public was to participate at all in what was otherwise primarily a run-through of communication links among government workers. There were conflicting reports about the sirens: the media reported stories of widespread failure, while a survey commissioned by the licensees was said to have found that they were heard by a "satisfactory" number of people. FEMA is supposed to verify public notification capability around all power plants in the country through official surveys conducted

shortly after full-scale soundings of sirens. But no such survey has been made anywhere in the nation because of a lack of funds, according to FEMA.

NYPIRG has received many complaints from people who live around the plants about both the sirens and the emergency planning booklet. Many either did not hear the siren at all or heard it so faintly that if they had not been purposely waiting and listening for it, they would have missed it. Some felt that the booklet was vague on some important points, difficult to read, or so falsely reassuring as to fail to communicate the deadly seriousness of the danger against which it was supposed to be a protection. Others said that they had never received the booklet, or received the wrong one for their area. Many were ready to testify officially about these and other problems. It seemed to us, however, that such testimony could be powerfully supplemented by an impartial survey, conducted for the New York Public Interest Research Group by an independent social research agency. Accordingly, late in the Spring of 1982 we approached the social researcher, Richard Altschuler, of Statistics For Business, who agreed to conduct such a survey. After consultations with NYPIRG representatives and some professional colleagues, he drew up and pretested a questionnaire. The decision was made to limit the area sampled to the part of Westchester County contained in the EPZ. The sample was drawn and the telephone interviews were conducted by a Westchester firm, Social Area Research, Inc.

On the basis of the results presented here, Mr. Altschuler prepared written testimony that was submitted to the Atomic Safety and Licensing Board on June 7, 1982. His report begins with the substance of that testimony, then gives full details on answers to all of the questions. In NYPIRG's view, this study goes a long way toward filling the gap caused by FEMA's failure to conduct its own mandated research, and constitutes a powerful indictment of the emergency plans in general and the utilities' attempt at public information in particular.

That effort failed on virtually every count. It is of literally vital importance that everyone in the EPZ who is capable of reading and understanding the booklet should have a copy, but the distribution system is shown to have been quite ineffective. Nothing about the brochure seizes the attention or announces that knowing its contents may save your life some day. Hence, there is little wonder that so few recipients even bothered to read it through. Many respondents said that they glanced at it and tossed it aside: "I just wasn't interested," one woman explained, making it evident that she had no idea about the life-and-death import of the contents.

It is evident that the booklet failed to transmit the information it should have, even when it was read. There was only one factual question about the contents to which a majority of the sample could give the correct answer -- that notification would be by siren, which had also been reported by the media. Few respondents, however, could correctly describe how to distinguish the Indian Point warning signal from any other siren. The results strongly suggest that telephone lines would be jammed in a radiological emergency, stymieing the communications on which the plans rely. In addition, substantial numbers of people, not trusting the sources of instructions or disagreeing with their wisdom, would follow their own judgment or impulse about getting their children from school, and about when and how to leave

the area. One respondent said: "That dumb plan expects us to drive to White Plains. They just don't know our roads at all -- it's just too crowded. We'd be killed on the road."

We believe that these findings seriously impugn the workability of the emergency plans for Indian Point. But they have much more than local significance. Wherever nuclear plants exist, they potentially threaten many people, often people who derive no benefit from them. The owners of those reactors are legally and morally obliged to get certain vital messages to everyone at risk, and to conduct surveys of this kind themselves to find out how well the information has been understood. NYPIRG feels that the results of this survey put the burden of proof on all nuclear utilities to demonstrate that they have succeeded in the difficult task at which Con Edison and PASNY failed so badly.

Joan Holt
Director, Indian Point Project

SUMMARY OF PRINCIPAL FINDINGS

A telephone survey of 105 randomly selected Westchester residents in the 10-mile emergency planning zone around the Indian Point nuclear power plants revealed:

1. Overall, the level of understanding and information about emergency plans is very poor, despite distribution of a booklet ("Indian Point, Emergency Planning, and You") and despite dissemination of much of this information by the mass media.
2. More than a third of the residents said that they had not received copies of the booklet: of those who thought they had gotten it, about a third said they had not read it, and another 22% said they had read only "some of it." Thus, the message got through to only a little more than one in every four of the target population.
3. Among those who had the booklet, over half did not know where it was at the time. Less than 30% of the total sample had a copy and knew where to lay hands on it.
4. Sirens have been installed and tested, which are to alert people if there is a nuclear accident, but 64% of the respondents said they have never heard the siren.

-- Only 21% of them said with certainty that they would be able to distinguish the Indian Point siren from others, if they did hear it.

5. If a siren announced an emergency, about 8 of every 10 people in the sample did not know that their first act should be to seek more information; instead, most indicated that they didn't know what they would do, or that they would flee the area at once.
6. Only 8% knew that the plan advises residents not to use phones; another 3% thought that use would be somewhat restricted.
7. When informed that the plan asks them not to, more than half said they would have a problem in refraining from telephoning in an emergency.

-- Thus, it seems highly likely that lines and switchboards would be quickly jammed in case of an accident at Indian Point.

8. Only 42% of the respondents who have children in school knew that they are supposed to meet their children outside the EPZ in case of an accident during school hours.

9. 70% of these parents did not know the location of the reception center where they are supposed to meet their children.
10. Over half of the parents said they would have trouble following the instructions of the official emergency plan when it comes to meeting their children outside the danger zone.
 - Many indicated that they would make every effort to get their children directly from school.
11. Among parents of children under 16, about a quarter admitted that the child is sometimes not in the care of an adult ("latch-key children"), and only a little more than half of these believed that their children would be able to get out all right if there were an accident at Indian Point.
12. The great majority of Westchester residents -- almost 70% -- don't know where they would go in a radiological emergency; they have made no plans.
13. The most trusted source of information and advice in an emergency would be Westchester Executive Alfred DelBello and the Nuclear Regulatory Commission (57% each -- the only ones of the six sources mentioned to have the faith of even a majority).
 - The least believed would be Con Edison, distrusted by a majority.
 - Thus, very large numbers of people would not only be confused, uncertain, and ill-informed if there were an Indian Point accident today, but they would also not know whom to trust for accurate information and sound advice.

All in all, the evidence of the survey is that the people of Westchester County would be ill-prepared to follow the emergency plans in the event of a serious accident at Indian Point, because of the ineffectiveness of the public education effort made so far.

DETAILED RESULTS: THE QUESTIONS AND RESPONSES

Question 1. HOW WILL THE AUTHORITIES WARN PEOPLE IF THERE IS A SERIOUS ACCIDENT AT INDIAN POINT?

	<u>Number</u>	<u>% of Total Responses</u>
Siren	60	57
TV / Radio	3	3
Other	2	2
Don't know	39	38

The correct answer, "Siren," is presented on page 4 of the official emergency planning booklet, "Indian Point, Emergency Planning, and You" (prepared and distributed by the Indian Point utilities), and has been disseminated by the mass media. Nevertheless, almost 4 out of each 10 people (38%) did not know how they would be warned, and another 5% gave wrong answers.

Question 2. THE EMERGENCY PLAN SAYS THAT THE FIRST WARNING WILL BE GIVEN BY A SIREN. BY THE WAY, HAVE YOU HEARD THE SIREN THEY'RE USING?

	<u>Number</u>	<u>% of Total Responses</u>
Yes	21	20
No	66	64
Don't know, Not sure	17	16

As can be seen, about two-thirds of the respondents have not heard the warning siren and another 16% weren't sure, leaving only 20% who could answer "yes" to this question.

"The siren malfunctioned I was told, but I thought I heard something."

Question 2a. IF YOU HEARD A SIREN RIGHT NOW, DO YOU THINK YOU COULD TELL THAT IT WAS BECAUSE OF AN ACCIDENT AT INDIAN POINT, RATHER THAN, SAY, A FIRE ENGINE, AMBULANCE, OR SOMETHING ELSE?

	<u>Number</u>	<u>% of Total Responses</u>
No, couldn't tell	64	61
Yes, could tell	22	21
Maybe, probably could tell	12	11
Don't know, not sure	7	7

Only about 20% of the respondents -- the same percentage who said they had heard the siren -- said they would be able to distinguish it from another type of siren or other noise. The great majority, 61%, said they would not be able to recognize the emergency warning siren.

Question 2b. HOW WOULD YOU RECOGNIZE THAT A SIREN MEANT A NUCLEAR ACCIDENT?

	<u>Number</u>	<u>% of Total Responses</u>
High pitch	5	12
Steady tone	11	27
Very loud	12	29
Other	8	20
Don't know	11	27

Note: Percentages are based on the 41 respondents who were asked this question; they add to over 100% because some respondents named more than one characteristic.

Only a fifth of the total sample (21%) gave any evidence that they would be able to recognize the siren.

"If it kept going I'd know it was a nuclear accident."

Question 3. IN CASE YOU HEAR THE WARNING SIREN, WHAT IS THE VERY FIRST THING YOU ARE SUPPOSED TO DO?

	<u>Number</u>	<u>% of Total Responses</u>
Turn on the radio or TV	13	12
Tune to channel 7/WABC	4	4
Read the instruction booklet	3	3
Get the family together	3	3
Make phone calls	1	1
Start packing	2	2
Other	31	30
Don't know	48	45

Page 4 of the emergency planning booklet prescribes "Tune to channel 7, WABC or another Emergency Broadcast station," yet only 4% of the respondents gave this answer. Combining the first three answer categories, only 20% of the sample said they would seek information as their first act. Many responses in the "Other" category included evacuating the area.

"Start praying and go to the basement."

"Stay put."

"Get far away on Route 9. Everybody will be on the road, though."

"Go to the location -- I forgot where it is."

"First I would panic; I would then drive to Port Chester on an uncrowded urban artery."

Question 4. ACCORDING TO THE PLAN, HOW ARE YOU SUPPOSED TO GET SPECIFIC INFORMATION ON WHAT TO DO?

	<u>Number</u>	<u>% of Total Responses</u>
Turn on the radio or TV	35	33
Tune to channel 7/WABC/EBS	9	9
Read the instruction booklet	11	11
Other	7	7
Don't know	42	40

As can be seen, though page 4 of the booklet describes what to do, 40% said they don't know how to get specific information.

"I'd call the police even though I know that's absurd."

"Not much you can do, is there? Just lay down and die."

Question 5. DOES THE PLAN SAY ANYTHING ABOUT USING OR NOT USING THE TELEPHONE?

	<u>Number</u>	<u>% of Total Responses</u>
No/OK to use phone	32	30
Only if vital/ Only special people	3	3
No one is to use phone	8	8
Other	1	1
Don't know	61	58

Pages 5 and 6 of the emergency planning booklet say not to use the phone, yet only 8% of the respondents gave this as the correct answer. Ninety-one percent of the respondents gave the wrong answer or didn't know.

Question 6. BY THE WAY, DO YOU HAVE ANY CHILDREN WHO GO TO SCHOOL IN THIS AREA?

	<u>Number</u>	<u>% of Total Responses</u>
No	67	64
Yes	38	36

As can be seen, about 1/3 of the respondents had children in school and about 2/3 did not. The total number of children among the sample group was 68, with a mean age of 10.5 years. The range was 16 years (from age 3 to 19). The mean number of children per respondent parent was 1.8.

Question 6a. IF THERE IS AN ACCIDENT AT INDIAN POINT DURING SCHOOL HOURS, WHAT ARE YOU SUPPOSED TO DO ABOUT YOUR CHILDREN?

	<u>Number</u>	<u>% of Total Responses</u>
Get children from school	0	0
Wait for them to come home	2	5
Meet them outside the danger zone	16	42
Don't know	14	37
Other	6	16

Page 7 of the emergency planning booklet instructs parents with children in school to meet them outside the danger zone in a specially designated area, depending upon where the respondent and school are located. However, 58% of the respondents with children didn't know the correct answer. Once again, as in many of the previous questions, "Don't know" was the modal category among the incorrect responses.

"It's very unclear -- I believe he goes south but I go north."

"Some guy will drive from White Plains to bus my son to Port Chester."

Question 6b. WELL, ACCORDING TO THE PLAN, YOU ARE SUPPOSED TO MEET THEM OUTSIDE THE DANGER ZONE AT A SPECIAL CENTER. WHERE IS THE CENTER WHERE YOU WOULD FIND YOUR CHILD(REN)?

	<u>Number</u>	<u>% of Total Responses</u>
Named a place	11	30
Don't know	26	70

Page 12 of the emergency planning booklet describes the reception centers where parents are supposed to meet their children, yet only 30% of respondents with children in school could name a place, and several of these responses were vague. As can be seen from the data, 70% of the respondents did not know where they are supposed to meet their children.

*"Somewhere in North Salem, Bedford, and Mt. Kisco."
(Three children go to different schools; each would be bussed to a separate area.)*

Question 7. HAVE YOU RECEIVED A COPY OF THE BOOKLET, "INDIAN POINT, EMERGENCY PLANNING AND YOU," WHICH EXPLAINS WHAT TO DO IF THERE IS A NUCLEAR ACCIDENT?

	<u>Number</u>	<u>% of Total Responses</u>
No	36	34
Yes	61	58
Not sure, maybe	6	6
Don't know	2	2

As can be seen, about a third of the respondents have not received the booklet, and another 8% aren't sure if they have.

"I never received the booklet or any information. Can you give me some phone numbers to call? I'm new to this area and scared."

Question 7a. DO YOU KNOW WHERE IT (THE BOOKLET) IS RIGHT NOW?

	<u>Number</u>	<u>% of Total Responses</u>
Yes	30	43
No	31	45
Don't know	8	12

Among those who have received the booklet, nearly six out of ten did not know its present location. Less than 30% of the total sample had both received it and knew where to find it.

"In the garbage -- that booklet was a farce."

Question 7b. HAVE YOU READ IT?

	<u>Number</u>	<u>% of Total Responses</u>
Yes	28	41
No	22	32
Don't know	3	4
Some of it	15	22

Among those who have received the booklet, more have read it than not, especially when "Some of it" is included, but about a third have not read it. Only about 27% of the total sample had read through the booklet.

"Every word -- the whole plan is garbage."

"My husband read it; I'm not interested because I went through World War II and know that planning is useless."

"No because Con Ed imported people from Iowa to do it and it's all bull. They know nothing about Routes 9 and 9A."

Question 7c. HAVE YOU DISCUSSED THE INFORMATION IN IT WITH OTHER PEOPLE IN YOUR HOUSEHOLD?

	<u>Number</u>	<u>% of Total Responses</u>
Yes	35	51
No	34	49
Don't know	0	0

Page 15 of the emergency planning booklet instructs residents to discuss the contents with their families, yet only about half who have received the booklet have done so -- a third of the total who were intended to be reached.

"Actually the only discussion occurred when my 13-year-old son told us to read the booklet."

Question 8. HAVE YOU AND YOUR FAMILY DECIDED WHERE YOU WOULD GO IF YOU HAD TO LEAVE THE AREA BECAUSE OF AN INDIAN POINT ACCIDENT?

	<u>Number</u>	<u>% of Total Responses</u>
Yes	34	33
No	62	60
Don't know	7	7

Page 15 of the booklet instructs readers to know where they would go in case of a nuclear accident, yet only a third of those with booklets said they knew where they would go, while two-thirds indicated they didn't know where they would go.

"Once it goes it's too late to go anywhere."

"Nowhere -- we would stay put."

"Ardsley -- that's where the book told us to go."

"Westchester Hospital and be first in line. If something happened it would be all over and we'd burn up."

Question 9. ACCORDING TO THE PLANS, YOU ARE NOT SUPPOSED TO USE THE PHONE, SO THE LINES CAN REMAIN FREE FOR OFFICIALS TO USE. DO YOU THINK YOU WOULD BE ABLE TO FOLLOW THIS INSTRUCTION, OR ARE THERE ANY CALLS YOU FEEL YOU WOULD HAVE TO MAKE?

	<u>Number</u>	<u>% of Total Responses</u>
Would follow	48	46
Would have to make calls	23	22
Depends, <u>might</u> have to use phone	20	19
Don't know	14	13

More people indicated that they would follow the plan than fell into any other response category, but 41% of the respondents indicated that they would or might make calls, and when the "Don't know" responses are added to them, the data indicate that more than half of the respondents might not follow the plan.

"I'd have to call my son."

"I'm not at all sure what I'd do in an emergency situation."

"I don't know, but let's not get all upset about it; when it happens we'll deal with it."

Question 10. IF YOU HEARD THE WARNING SIREN, TURNED ON THE TV OR RADIO AND WERE TOLD THAT YOU WOULD BE SAFE IF YOU JUST STAY INDOORS, WOULD YOU HAVE ANY PROBLEM WITH THAT, OR NOT?

	<u>Number</u>	<u>% of Total Responses</u>
No problem, would do it	86	82
Would assemble family, start packing to leave	4	4
Would leave at once	5	5
Other	6	5
Don't know	4	4

The great majority of respondents, as can be seen, indicated they would have no problem following the order to remain indoors.

"Ok if the kids are at home; absolutely not if all 3 children were not safe in my house."

"It depends on who was talking and what kind of accident."

Question 11. ACCORDING TO THE PLAN, YOU ARE SUPPOSED TO GO TO A RECEPTION CENTER, A SPECIAL PLACE OUTSIDE THE DANGER ZONE WHERE YOUR CHILD(REN) WOULD BE BUSSED. WOULD YOU HAVE ANY PROBLEM FOLLOWING THIS INSTRUCTION, OR WOULD IT WORK OK?

	<u>Number</u>	<u>% of Total Responses</u>
No problem	16	42
Problem	20	53
Don't know, uncertain	2	5

As can be seen, more than half the respondents would have a problem following the plan to meet their child(ren) outside the danger zone. From answers written in by the interviewers, it is clear that many parents would want to pick up their children from school.

"It wouldn't work -- they couldn't educate people to do that. They're just pretending to do their job. You'd have to do a media blitz and get people into neighborhoods to educate the residents."

"I don't trust the bus drivers."

"It wouldn't work -- I'd go to school to get my 13-year-old."

"I'd be with the children. The teacher told me she wouldn't go in the bus. I'm scared!"

"According to the plan, parents are sent to Dutchess County, children to another place. How will they ever meet?"

Question 12. (for respondents with a child under 16) ARE THERE ANY TIMES AFTER SCHOOL HOURS WHEN YOUR CHILD(REN) IS (ARE) NOT IN THE CARE OF SOME ADULT?

	<u>Number</u>	<u>% of Total Responses</u>
No	25	74
Yes/Occasionally	9	26

Question 12a. (for those who answered "Yes/Occasionally" to the above) IF THERE WAS AN ACCIDENT AT INDIAN POINT AND PEOPLE HAD TO LEAVE, WOULD YOUR CHILD GET OUT ALL RIGHT?

	<u>Number</u>	<u>% of Total Responses</u>
Yes	5	56
Problem	3	33
Don't know	1	11

"I work within 2 minutes so I could get home to get them."

"There's no guarantee that bus drivers would show up. The National Guard should drive them."

Question 13. YOU MIGHT HEAR STATEMENTS ON THE RADIO OR TV BY QUITE A NUMBER OF DIFFERENT PEOPLE AND ORGANIZATIONS. I'M GOING TO MENTION SOME OF THEM, AND AS I DO, PLEASE TELL ME FOR EACH ONE WHETHER YOU WOULD TRUST THEM TO TELL YOU THE TRUTH AND GIVE YOU GOOD ADVICE, OR WHETHER YOU MIGHT TEND TO DISTRUST THEM.

<u>Person/Organization</u>	<u>Trust</u>		<u>Distrust</u>		<u>Don't know</u>	
	<u>No.</u>	<u>%</u>	<u>No.</u>	<u>%</u>	<u>No.</u>	<u>%</u>
Alfred DelBello	57	54	24	23	24	23
Hugh Carey	40	38	44	42	21	20
Con Edison	32	30	53	50	20	19
PASNY	36	34	29	28	40	38
Nuclear Regulatory Commission	57	54	25	24	23	22
Independent scientist or organization	46	44	14	13	45	43

As can be seen from the above data, the most trusted individual or organization was Alfred DelBello, the County Executive, and the NRC, which tied at 54%. The least trusted was Con Edison, at 30%. PASNY appears to have an "identity problem," with the second highest tally (38%) in the "Don't know" category. The respondents were least distrustful of an independent scientist or organization, but this category received the highest "Don't know" count at 43%.

"I hope they would tell the truth."

"Never heard of them (PASNY). I would tend to trust government agencies, not politicians and private groups."

"I wouldn't know who to trust -- you can't believe anybody any more."

APPENDIX A: METHODOLOGY

This report is based on a telephone survey of 105 residents 18 years of age or older in 105 different households within the 10-mile radius of the Indian Point nuclear power plants. The interviewing firm Social Area Research, Inc., located at 44 Carman Road, Scarsdale, New York, was sub-contracted to select the sample and conduct the interviews.

The telephone numbers employed in the study were selected through random digit dialing techniques to ensure the representativeness of the sample, which included the following telephone exchanges and areas:

<u>Telephone Exchange</u>	<u>Area</u>
245	Yorktown Heights, Jefferson Valley, Amawalk
271	Croton-on-Hudson, Croton Heights
526	Putnam Valley, Oscawana
528	Mohegan Lake, Putnam Valley
737	Crugers, Buchanan, Peekskill, Verplanck, Montrose, Cortlandt
739	Peekskill
762	Ossining, Teatown
962	Shrub Oak, Yorktown

The research instrument used to collect the data was a questionnaire which is appended to this report. The questionnaire was pretested and revised during the week of Monday, May 17 and administered to the respondents in this study on Wednesday evening, May 26, Thursday evening, May 27, and Friday afternoon and evening, May 28.

APPENDIX B: DESCRIPTION OF THE SAMPLE

Table 1:

Sex of Sample

	<u>Number</u>	<u>% of Total Responses</u>
Male	36	34
Female	69	66

Table 2:

Age of Sample

	<u>Number</u>	<u>% of Total Responses</u>
Under 30 years	20	19
30 to under 40 years	31	30
40 to under 50 years	13	12
50 to under 60 years	17	16
60 to under 70 years	8	8
Over 70 years	16	15

Table 3:

Employment Status of Sample

	<u>Number</u>	<u>% of Total Responses</u>
Employed	55	52
Not employed or not in labor force	50	48

Table 4:

Educational Status (Last Grade Completed) of Sample

	<u>Number</u>	<u>% of Total Responses</u>
Grade school	13	13
High school	44	42
Some college	22	21
College	10	10
Postgraduate	15	14

Table 5:

Number of Cars Per Household of Sample

Mean = 1.8

(Total number of cars = 188)

INDIAN POINT SURVEY

Hello, my name is _____; I'm with Social Area Research, Inc. We're conducting a survey about emergency plans for the area around Indian Point. May I ask you a few questions, please?

(IF IN DOUBT ABOUT AGE) First, are you over 18 years old? (IF NO) Is there an adult there I might speak to? .

As you may have heard, an emergency plan has been written for Westchester county in case of a serious accident at the Indian Point nuclear power plants. I'd like to ask you a few questions about that.

1. How will the authorities warn people if there is a serious accident at Indian Point?

☐ Siren ☐ TV/radio ☐ Other ☐ DK

2. Right, /or:/ Well, the emergency plan says that, the first warning will be given by a siren. By the way, have you heard the siren they're using?

☐ Yes ☐ No ☐ DK, not sure

2a. If you heard a siren right now, do you think you could tell that it was because of an accident at Indian Point, rather than, say, a fire engine, ambulance, or something else?

☐ No, couldn't tell (SKIP TO Q. 3)

☐ Yes, could tell ☐ Maybe, probably could ☐ DK, not sure

2b. How would you recognize that a siren meant a nuclear accident? (CHECK AS MANY AS APPLY)

☐ High pitch ☐ Steady tone ☐ Very loud

☐ Other ☐ DK

3. In case you hear the warning siren, what is the very first thing you are supposed to do?

☐ turn on radio or TV ☐ tune to channel 7 or WABC } (SKIP TO Q. 5)
☐ read the instruction booklet

☐ get family together ☐ make phone calls ☐ start packing

☐ Other: _____

☐ DK

4. According to the plan, how are you supposed to get specific instructions on what to do?

☐ turn on radio or TV ☐ tune to channel 7, WABC, other EBS station

☐ read the instruction booklet ☐ other ☐ DK

5. Does the plan say anything about using or not using the telephone?

- ☐ No/ OK to use phone ☐ use phone only if vital/only special people can use
☐ no one is to use phone ☐ Other ☐ DK

6. By the way, do you have any children who go to school in this area?

☐ No (SKIP TO Q. 7)

☐ Yes: What are their ages? _____

6a. If there is an accident at Indian Point during school hours, what are you supposed to do about your children?

- ☐ Get children from school ☐ Wait for them to come home
☐ Meet them outside danger zone _____
☐ DK ☐ Other: _____

6b. Well, according to the plan, you are supposed to meet them outside the danger zone at a special center. Where is the center where you would find your child(ren)?

☐ DK

7. Have you received a copy of the booklet, "Indian Point, Emergency Planning, and You, which explains what to do if there is a nuclear accident?

☐ No (SKIP TO Q. 8)

☐ Yes ☐ Not sure, maybe ☐ DK

7a. Do you know where it is right now?

☐ Yes ☐ No ☐ DK

7b. Have you read it?

☐ Yes ☐ No ☐ DK ☐ Some of it

Why not? _____

7c. Have you discussed the information in it with other people in your household?

☐ Yes ☐ No ☐ DK

8. Have you and your family decided where you would go if you had to leave the area because of an Indian Point accident?

☐ Yes ☐ No ☐ DK

9. According to the plans, you are not supposed to use the phone, so the lines can remain free for officials to use. Do you think you would be able to follow this instruction, or are there any calls you feel you would have to make?

() Would follow () Depends, might have to use phone
() Would have to make calls () DK

10. If you heard the warning siren, turned on the TV or radio and were told that you would be safe if you just stay indoors, would you have any problem with that, or not?

() No problem, would do it
() Would assemble family, start packing to leave
() Would leave at once
() Other _____
() DK

IF R DOES NOT HAVE A CHILD IN SCHOOL: SKIP TO Q. 13 (Next Page)

11. According to the plan, you are supposed to go to a reception center, a special place outside the danger zone where your child(ren) would be bussed. Would you have any problem following this instruction, or would it work OK?

() No problem; OK
() Problem: _____
() DK, uncertain

12. (IF R HAS ANY CHILD UNDER 16) Are there any times after school hours when your child(ren) is (are) not in the care of some adult?

() No (SKIP TO Q. 13, next page)
() Yes/occasionally

- 12a. If there was an accident at Indian Point and people had to leave, would your child get out all right?

() Yes
() Problem _____
() DK

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

*83 FEB 24 A10:17

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

SECRETARY
ING & SERVICE
BRANCH

In the Matter of)

CONSOLIDATED EDISON COMPANY OF NEW YORK)
(Indian Point Unit 2))

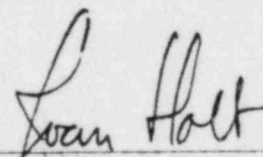
Docket Nos. 50-247 SP
50-286 SP

POWER AUTHORITY OF THE STATE OF NEW YORK)
(Indian Point Unit 3))

22nd February 1983

Certificate of Service

I hereby certify that copies of the Supplemental Testimony of Samuel W. Anderson, PhD., Charles Awalt, Kai Erikson, Sonny Hall, John Roden, Alma Cormican, James Murphy and Richard Altschuler, NYPIRG's Motion for Discovery Pursuant to 10 CFR 2. 741 (a) (2) to Permit Entry Upon Land in Control of the Licensees, NYPIRG Motion for Preservation and Production of Certain Documents relevant to the Exercise of March 9, 1983, and Joan Holt's Letter to Administrative Judges, James P. Gleason, Esq., Dr. Oscar H. Paris, and Mr. Frederick J. Shon, regarding Limited Appearance Hearings in New York City, have been served on the official minimum service list for the above captioned proceeding by depositing in the United States mail, first class, postpaid, this 22nd day of February, 1983. Copies to Administrative Judges Gleason, Shon and Paris; James Laurenson; Ruthanne Miller; David Lewis and Janice Moore sent by Express Mail. Copies to Brent L. Brandenburg, Esq., David H. Pikus, Esq., and Richard F. Czaja, Esq., hand delivered, February 22nd, 1983.


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VICE PRESIDENT
NUCLEAR PRODUCTION

TELEPHONE
(704) 373-4531

February 24, 1983

Mr. Harold R. Denton, Director
Office of Nuclear Reactor Regulation
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Attention: Mr. J. F. Stolz, Chief
Operating Reactors Branch No. 4

Subject: Oconee Nuclear Station
Docket Nos. 50-269, -270, -287

Dear Sir:

By letter dated November 12, 1982, Duke Power Company submitted a proposed license amendment to the Oconee Facility Operating License and revision to the Technical Specifications which concerned heatup, cooldown, and inservice test limitations for the reactor coolant systems of each Oconee unit. This submittal supplements the initial submittal and provides curves which are based on the materials properties previously provided and a revised set of operator guidance.

For several months, Duke and Babcock and Wilcox, the Oconee NSSS vendor, have been reviewing and evaluating the analytical assumptions, such as the number of reactor coolant pumps in operation and step changes in temperature, used in establishing the curves. These assumptions were compared to actual plant operation to assure consistency and to provide sufficient operational flexibility. The resultant new operator guidance is contained in Tables 1 and 2 and was used in the development of the new Technical Specification curves that are attached. The proposed new curves are based on the analytical techniques documented in BAW-10046 and material properties projected for 15 EFPY. Predicted changes in material properties were based on data contained in BAW-1511P, BAW-1697, and BAW-1699 which have been submitted previously.

These enclosed 15 EFPY curves replace those currently under review by the NRC. The Oconee 1 curves were revised to reflect the new operational guidance for plant cooldown and to incorporate the weld chemistry data from BAW-1511P. The Oconee 2 and Oconee 3 curves reflect the new plant cooldown operational guidance and the materials data from BAW-1697 and BAW-1699.

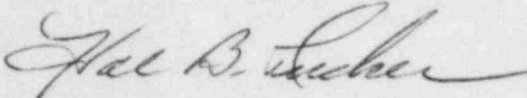
Duke Power personnel have discussed this matter with the appropriate NRC reviewer. However, should there be any question concerning this submittal, please call the normal licensing contact.

A001

Mr. Harold R. Denton, Director
February 24, 1983
Page 2

Inasmuch as this submittal supplements a proposed license amendment previously submitted, no additional license fees are considered necessary.

Very truly yours,



Hal B. Tucker

RLG/php
Attachment

cc: Mr. James P. O'Reilly, Regional Administrator
U. S. Nuclear Regulatory Commission
Region II
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Atlanta, Georgia 30303

Mr. J. C. Bryant
NRC Resident Inspector
Oconee Nuclear Station

Mr. E. L. Conner, Jr.
Office of Nuclear Reactor Regulation
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Data for Preparation of Pressure-Temperature Limit Curves
for Duke Power Company, Oconee Nuclear Station - Unit 1, Applicable
through 15 Full Power Years

Material Heat No.	Identification Type	Bellline Region Location	Weldment Location		Weld 1/4T Location	Unirr. RTNDT OF (1)	Copper Content % (2)	Phosphorus Content, % (2)	Neutron Fluence end of 15 EFPPY (E > 1 MeV), n/cm ²		Radiation-induced ΔRT_{NDT} at end of 15 EFPPY, $\Delta^{\circ}F$ (3)		Adjusted RT _{NDT} at End of 15 EFPPY of	
			Midplane to Weld Cl, cm	from Major Axis, Degrees					At 1/4T	At 3/4T	At 1/4T	At 3/4T	At 1/4T	At 3/4T
AHR-54	SA508, Cl 2	Lower Nozzle Belt	--	--	--	(+60)			5.70E17	1.33E17	<50/29	<50/14	<110/89	<110/74
C2197-2	SA302B, Mod	Intermed. Shell	--	--	--	(+40)			2.69E18	6.34E17	<50/34	<50/16	<90/74	<90/56
C3278-1	SA302B, Mod	Upper Shell	--	--	--	(+40)			3.58E18	8.3E17	90	<50/43	130	<90/83
C3265-1	SA302B, Mod	Upper Shell	--	--	--	20			3.58E18	8.3E17	75	<50/36	95	<70/56
C2800-1	SA302B, Mod	Lower Shell	--	--	--	(+40)			3.58E18	8.3E17	72	<50/35	112	<90/75
C2800-2	SA302B, Mod	Lower Shell	--	--	--	20			3.58E18	8.3E17	72	<50/35	92	<70/55
SA1494	Weld	Outlet Nozzle	+245	--	--	(+20)			1.92E16	4.49E15	<50/8	<50/4	<70/28	<70/24
SA1526	Weld	Outlet Nozzle	+245	--	--	(+20)			1.92E16	4.49E15	<50/15	<50/7	<70/35	<70/27
SA1135	Weld	Intermed. Circum.	+199	--	Yes	(+20)			5.70E17	1.34E17	54	<50/26	74	<70/46
SA1229	Weld	Upper Circum. (I.D. 612)	+123	--	Yes	(+20)			2.69E18	--	148	--	168	--
WF25	Weld	Upper Circum. (O.D. 392)	+123	--	No	(+20)			--	6.34E17	--	86	--	106
SA1585	Weld	Middle Circum.	-61	--	Yes	(+20)			3.58E18	8.32E17	126	61	146	81
WF-9	Weld	Lower Circum.	-249	--	Yes	(+20)			1.98E16	4.65E15	<50/9	<50/5	<70/29	<70/5
SA1073	Weld	Upper Longit. (Both)	--	22	Yes	(+20)			2.11E18	4.99E17	151	74	171	94
SA1493	Weld	Middle Longit. (Both)	--	48	Yes	(+20)			2.60E18	6.08E17	150	73	170	93
SA1430	Weld	Lower Longit. (Both)	--	20	Yes	(+20)			3.16E18	7.68E17	166	82	186	102

(1) Per BAW-10046P, March 1976

(2) Weld Chemistry per BAW-1511P, October 1980

(3) Per Regulatory Guide 1.99, Revision 1