

BEFORE THE NUCLEAR REGULATORY COMMISSION

In the Matter of

Indian Point Unit 2 Entergy

Docket Nos. 50-247 SP

Indian Point Unit 3 Entergy

50-286 SP

MOTION FOR RECONSIDERATION

Parents Concerned About Indian Point, intervenors in the above captioned action, hereby request that the Nuclear Regulatory Commission reconsider the refusal to reopen the record concerning radiological emergency planning and preparedness around the Indian Point Nuclear Generating Stations, 50 miles north of New York City. In support of its motion, Parents, through the undersigned, would show the following:

1. Parents is a voluntary grass roots group of citizens, residents and employees in and around the Indian Point plants which has full intervenor status in this administrative action. Attachment A illustrates our involvement in this historic investigation concerning the adequacy of planning and preparedness for a radiological emergency in the heart of the country's most densely populated metropolitan area.

2. The crucial questions at issue in this proceeding include:

- What is the current status and degree of conformance within NRC / FEMA guidelines of state and local emergency planning within a 10-mile radius of the site?
- Should the evacuation zone be expanded?
- Can the Licensees be depended upon to notify the authorities of an emergency promptly and accurately enough to assume effective response?
- Have the problems of evacuating children from threatened areas been adequately addressed?
- What plans have been made for people with special needs?
- What agreements have been reached, and what training provided, to the emergency personnel who will be required to respond?
- Is the road system in the vicinity of the Indian Point plant adequate for timely evacuation?
- Should license conditions prohibit power operation of Units 2 and 3 when the roadway network becomes degraded because of adverse weather conditions?

3. Parents Concerned About Indian Point prepared the testimony of over 100 witnesses representing parents of children home alone or children in different schools; parents who must rely on public transportation; people who care for children with special needs; school teachers and administrators; day care center operators and babysitters; recreation directors; librarians; bus drivers; police; Red Cross and ambulance corps personnel; fire fighters; nurses; doctors;

psychologists; elected officials; and church leaders; who all pointed out defects in the plans and state of readiness for a disaster at Indian Point.

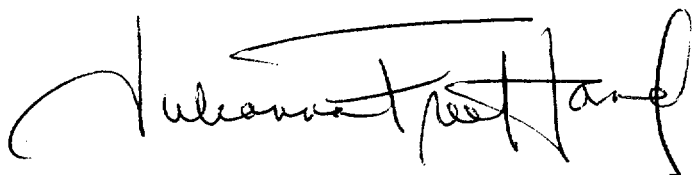
4. During hearings the question of deliberate suicide terrorism backed by a worldwide network of moral and financial support was not considered. This unanalyzed condition and extraordinary circumstance brings a new urgency and relevance to the adequacy of radiological emergency planning in the area surrounding New York City. Attachment B is the Interim Report undertaken by Westchester County Legislator Richard Brodsky.

5. Local officials have begun to call for comprehensive review, as indicated by the resolution of the Supervisor and Town Board of Town of Cortlandt, it is time to take a thorough public look at the current state of compliance and capability regarding regional response to a major nuclear incident. Attachment C is the public testimony of (now) Westchester County Legislator Wishnie, and town of Cortlandt resolution.

6. The most efficient way to go about such an investigation is to re-open the record in this administrative proceeding and invite all interested persons to submit testimony on the contentions formulated by the Atomic Safety Licensing Board under Judge Louis J. Carter, Chairman, about Indian Point emergency planning and preparedness. Judge Carter resigned in protest because " the goals of a truly independent Licensing Board has been needlessly subordinated to other goals in the Indian Point case." Attachment D is the congressional investigation into the hearings after the NRC's rules of evidence revision.

7. Re-opening the record would be an opportunity to vindicate the concern of Judge Carter "in making the NRC's legal process a finer craft so that the quality of its hearings may be improved and public participation increased." Attachment E is presiding judge of ASLB, Congressman Richard Ottinger and Parents' school witnesses.

Respectfully submitted,



Parents Concerned About Indian Point

By: Julianna FreeHand

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Croton-on-Hudson, NY 10520

Fax:914-271-6714

Attachment A. Notes written at time on margins of photos by Parents' member photographer Julianna FreeHand.

l-r: Croton Parents Concerned About Indian Point presented their case against Indian Point, Phyllis Rodriguez lost her son Greg on 9-11, and attorney Anna Reisner, after months of frustrating stalls. Although Parents felt gratified that the officials testifying for them were heard by the board, they felt concerned that the Board refused to hear two panels of mothers because their individual response was considered immaterial and irrelevant to the NRC. 'Parental concern is the heart of our case and also the reason that we have put in all these 18 months of volunteer hours,' said Ms. Rodriguez".

Parents Concerned About Indian Point Response to Memorandum & Order of 1/7/83
Testimony of bus driver, Fern Narod-Shiek



Julianna FreeHand

considered
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Phyllis Rodriguez, spokesperson
member of Croton Parents Concerned About Indian Point
presented their case against the Indian Point Emergency Plan after months
of frustrating stalls. Although Parents felt gratified that the officials testifying
for them were heard by the board, they felt concerned that the Board refused to

Anna Reisner

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of

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

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

Docket Nos. 50-247 SP
50-286 SP

January 24, 1983

Parents Concerned About Indian Point
Response to Memorandum and Order
of January 7, 1983

INTRODUCTION

Parents Concerned About Indian Point (Parents) hereinafter responds to the Atomic Safety and Licensing Board's (the Board) Memorandum and Order of January 7, 1983, Reformulating Contentions Under Commission Questions 3 and 4. In this Order, Contention 3.2 was eliminated and Parents' Proposed Contention IV was not admitted. Parents' urges the Board to reconsider these actions.

Contention 3.2 and the testimony dealing with the response of the public and emergency workers is vital to an evaluation of the workability of the emergency plans for the protection of the public. Proposed Contention IV would call for the approval of the plan by officials of any government or agency with responsibilities under the plan, as an alternative means to evaluate major portions of emergency response capabilities as required by NUREG-0654, Planning Standard N. A realistic basis for evaluation is vitally necessary to ensure that there is a capability on the part of each body to carry out the responsibilities to which it is assigned.

CONTENTION 3.2 SHOULD NOT BE ELIMINATED

Contention 3.2

Emergency Planning for Indian Point Units 2 and 3 is inadequate

in that the plans make erroneous assumptions about the response of the public and of utility employees during radiological emergencies.

The elimination of Contention 3.2 is a grave error. In eliminating this contention, the Board stresses that the question of public response is not unique to Indian Point. Yet, in the same paragraph, the Board refers to the uniquely populous environs of Indian Point as the "central point of this investigation." Parents asserts that it is precisely this uniquely populous area which makes the question of human response so important. We have gathered testimony of experts, residents, and emergency workers about the direct cause and effect relationship of the dense population and the panic response.

Compounding the problem of heightened panic in a densely populated area is the unique geography of the area surrounding Indian Point. The region is closed off by hills, reservoirs, and rivers, leaving only a few inadequate and outdated roads available for evacuation. The dense population coupled with this confining topography, both of which are unique to Indian Point, will result in a situation in which the human response must be carefully considered.

Another element of human response which can be expected to affect the public's reaction in an evacuation or a request to shelter is the unique lack of confidence that the residents of Westchester have in the Licensees. Con Edison's lack of credibility with the public has been fired over the years by some of the highest electric rates in the country, the low safety rating of Indian Point Unit 2, and the fact that Con Edison decided to build a nuclear power plant on the Ramapo Fault. The operating history of the Indian Point reactors, including the containment fan cooler service water leak of October 17, 1980, the recent penalties for failure to prevent radiation exposure in excess of NRC limits, and the lengthy outage of Unit 3 for steam generator tube repairs, is a unique local condition which can be expected to exacerbate human response problems at Indian Point. Our witnesses must be heard as to the effect of this negative image of the Licensees on the ability and the willingness of the public to respond to an emergency in an orderly fashion.

The response of the public is not the only human response factor which is uniquely unpredictable to the evacuation of Indian Point. The response of emergency and utility workers is crucial to an effective evacuation. After the date of the Board Order of January 7, 1983, there has been much testimony presented by Westchester County officials as to the lack of contracts with

individual bus drivers, bus companies, and other emergency workers. This lack of written commitment and the resulting confusion as to any person's authority to order the emergency workers to participate in an emergency is unique to Indian Point. Our witnesses' testimony will give the Board needed insights into the response of these emergency workers during an emergency or an evacuation of residents around Indian Point.

Indeed, testimony on the human response factor will present critical information as to the feasibility of emergency planning and an evacuation of the area surrounding Indian Point. The uniquely populous area, the constraining topography made worse by narrow roads, the lack of credibility of the Licensees in the eyes of the public, and the uncertain response of emergency workers all raise fundamental questions as to the workability of the emergency response plans. The Licensees' disregard of realistic human response considerations results, in this case, in a pervasive lack of conformance with NRC/FEMA emergency planning guidelines. The failure of the Board to allow Contention 3.2 and hear testimony in support thereof, will totally undermine any chance of the successful protection of the people of this area in the event of an emergency at Indian Point.

Parents' Proposed Contention IV Should Be Admitted

Proposed Contention IV

Preparedness should be demonstrated by the willingness and ability of emergency workers in the field, by commitments in the form of letters of agreement from all emergency response agencies including schools, bus companies, fire departments, ambulance corps, and local Red Cross chapters, and by the approval, in the form of signatures on the plan, of elected officials of local governments which will be called upon to implement the plans.

The Board has incorrectly decided not to admit Proposed Contention IV. In its Order, the Board based their refusal on a statement that this proposed contention is actually a challenge to the emergency planning regulations under Commission Question 4. As such, the Board states that Parents has failed to show why requiring this evidence of actual preparedness would be more necessary at Indian Point than at other nuclear power plants.

The emergency planning effort at Indian Point has been especially prone to blatant errors on the part of the Licensees. Both local governments and citizens expected to take part in an emergency have been offended by the roles assigned to them. These roles are often impossible for them to fulfill, due to inadequate equipment, insufficient personnel, improper training, among other reasons.

Indian Point emergency planning is unique in that a major local government, Rockland County, has refused to participate in the planning effort. Schools have been given responsibilities which the teachers testify they are unable to carry out. The plan proposed by the Licensees repeatedly assigns duties to those who cannot, or will not, carry out those duties. Heads of departments in some cases do not clearly understand what they are supposed to do or how they are supposed to do it.

The Board cannot determine the status of emergency preparedness and the degree of conformity with the requirements of NUREG-0654 unless the Board ascertains that each entity is aware of and agrees to the responsibilities assigned it by the plan. The history of the emergency planning attempt at Indian Point has already resulted in major problems with the assignment of duties under the plan. In order to evaluate emergency response capabilities, an additional standard must be included under Planning Standard N of NUREG-0654. Parents' Proposed Contention IV should be allowed.

CONCLUSION

The unique situation of the Indian Point nuclear power plants mandates the inclusion of both Contention 3.2 and Parents' Proposed Contention IV.

Respectfully submitted,

Certificate of Service

I hereby certify that copies of this document have been served on the attached minimal service list by first class mail on this 14th day of January, 1983.

Phyllis Rodriguez
Phyllis Rodriguez

Phyllis Rodriguez
Phyllis Rodriguez
Parents Concerned About Indian Point
P.O. Box 125
Croton on Hudson, New York 10520

My name is Fern Narod-Shiek, my address and phone number is, ~~XXXXXXXXXXXXXXXXXXXX~~. I drive a school bus for the Mahopac school district. During April 1982 I attended a meeting of the League of Women Voters, in the Carmel Library. At that time I spoke out because the proposed evacuation plans for Indian Point stated that the bus drivers from the surrounding towns and also the contract carriers would drive the buses during an emergency evacuation: when Indian Point Nuclear Plant has an accident and releases radioactivity into the air contaminating a ten mile radius. What I said was that I am a bus driver and that I have not been informed by my supervisor that we have become part of the emergency evacuation plan. My understanding is that the bus drivers of the Mahopac and other school districts have been drafted by a private industry to drive evacuation vehicles, owned and operated by the Boards of Education and private companies during a public emergency when radioactivity occurs as a result of another accident at the Indian Point Nuclear Plant. Some of my co-workers heard "something" about this on the radio. A day or two later my immediate supervisor having heard something from someone stated to me "that he heard we would probably have to bus another town's children".

I have been driving a bus for five years and am familiar with the daily situations that arise within a transportation garage. Every bus driver has an assigned route and bus. I am the type of bus driver who is used to fill in whenever there is an absentee or if another run needs to be added. Since I am a backup driver I am aware of the absentee rate, as well as the number of broken down buses that a transportation garage may have to deal with in one day's time.

I would first like to talk about the operating conditions at the bus garage. Everyday there are buses that either break down or are taken out for DOT inspection. Everyday sees some drivers absent. There is no equipment ^{ON THE BUS} for repairs if there should be a breakdown on the road. Each morning the dispatcher has to assess how many buses and drivers are available for the regular runs. Since I am a backup driver I drive a different bus on a daily basis possibly covering two different runs. One observation that I have made is

that just about none of the buses have radios. This is not only true of the town of Mahopac but also of the surrounding towns and the contract carriers. Since most of the buses do not have radios most of the drivers cannot be contacted during regular driving hours which are approximately from seven to ten and one to four Monday through Friday. As the drivers cannot be contacted during regular driving hours, if there were an emergency only drivers with radios would know to double up on runs. The garage would just have to wait for the unaware drivers to come in with the buses. The waiting time between the call and the ability to be on the road to the emergency site would be at least an hour.

There are sixty-two bus drivers at the Mahopac garage. Twenty-two work full time for the school system. Forty are only part time employees and go home between the runs. Therefore there is a likely possibility that two-thirds of the drivers would be unavailable should the emergency occur during in-between hours.

This immediately takes me to another problem about using the school buses for the evacuation plan. This problem is that it is the lawful responsibility of the driver to transport the children from one location to another, never allowing them off the vehicle unless it is their designated location, whether going to school or going home again. So, what is the driver to do if recalled for emergency proceedings?

This conflict is further complicated because most of the bus drivers are women with either children in school or families living in the area of contamination. I realize that the NRC states that the ten mile radius is the only area of contamination to be concerned about but, nevertheless, Mahopac goes in and out of the ten miles as the crow flies and many of us in the area would most probably be inclined to instinctively protect and respond to our families and neighbors first.

I have no contract stating that I would be driving for a private industry and therefore I will not guarantee that I will be available for any emergency evacuation. Furthermore, my responsibility is to the children of the Mahopac school system. It is my understanding that the evacuation buses will not only be picking up children from other school systems but will also be picking up members of the general public from the contaminated towns.

(3)

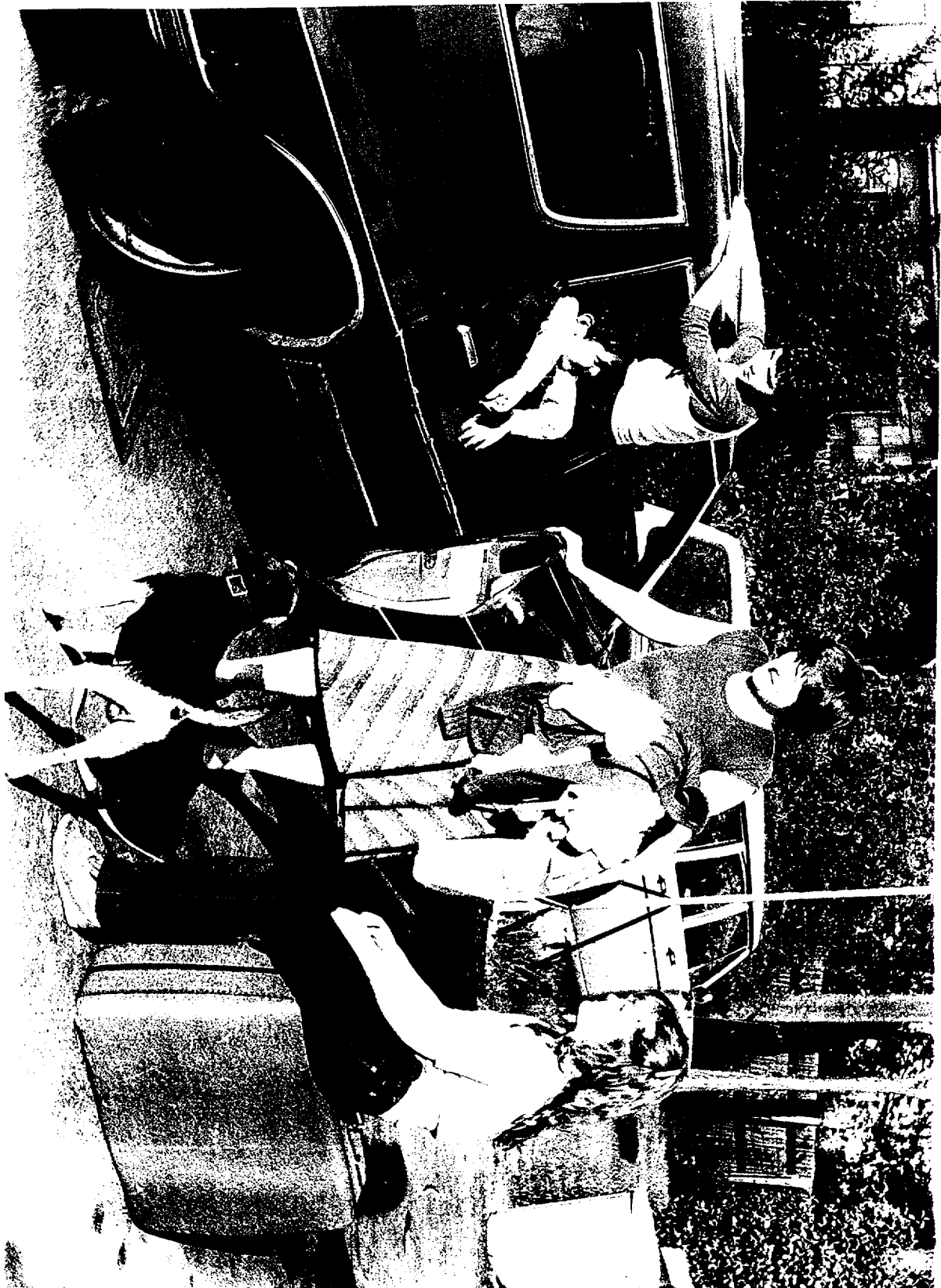
Before ending I thought it would be a good idea if I enumerated some of the technical problems involved with rerouting buses during an emergency of any type. To start off with we have had no training pertaining to emergencies of any type. Secondly, with no radios drivers cannot be contacted. Third, if there are children on these buses exactly what are we supposed to do with these children? Fourth, if the evacuation needs to take place either on weekends, holidays, during the summer or any workday between nine a.m. and one p.m., or after five there would not be many drivers at work to be sent out on these runs. Fifth, since the people who have to know what to do (drivers, supervisors and dispatchers) have not been informed of these plans, none of us will know where to pick up people, where to drop them off, which schools to go to and which routes to take. The sixth problem I think about as a bus driver is the reality that the roads will be used by many other people trying to get out of the areas of contamination. The seventh problem is the amount of exposure the buses and of course the drivers would be exposed to.

Another thought I had pertaining to the routes and buses is taking contaminated buses out of the contaminated zone. I would certainly like to know the number of times I would be required to enter the contaminated area and how much exposure the NRC is willing to allow on the people driving these buses. I would like to know if there will be any compensation especially after we have reactions to this exposure which might not show up immediately. I am wondering if we will be equipped with protective clothing or any emergency equipment for these accidents. Since there is no repair equipment on these buses I would be concerned about breaking down in the contaminated area.

James Harold Sherr

Attachment B.

Photo:GO-NAG organizer Barbara Hickernell with 'potential evacuation scene'.
Westchester County Legislator R. Brodsky's 47 page Interim Report Updating
Emergency Evacuation Plan in 2002 .



Attachment C.

Resolution on January 15, 2002--Cortlandt Town Board.

Photo 1983 "l-r: Chief Ronald Goldfarb, Ossining Police Chief & Village of (then) Ossining Town Supervisor Wishnie.

Chief Goldfarb surprised the Board when he testified that his police have standing orders NOT to arrest anyone trying to return to the Emergency planning Zone (EPZ) to evacuate their families.

Supervisor Wishnie (now a Westchester County Legislator) explained that it would take an army--MARTIAL LAW-- to enforce such a plan. Besides testifying to the problems that the Town of Ossining has with the plan, Supervisor Wishnie spoke in his capacity as Chairman of the Ossining Red Cross Disaster Team. He testified that there is presently only ONE trained member of the Red Cross living in the Cortland area and that he frequently responds to emergencies in the area because of that shortage. He said that the resources of the Westchester Red Cross are strained by a fire which might leave 30-40 families homeless. Under no circumstances could the Westchester Red Cross respond to a situation leaving thousands of people homeless."

Ronald Goldfarb Chief of Police Village of Ossining
Wishnie Ossining Town Supervisor
Chief Goldfarb surprised the Board when he testified that his police have standing orders NOT to arrest anyone trying to return to the EPZ to evacuate their families, Wishnie explained that it would take an army--MARTIAL LAW-- to enforce such a plan.



Juliana From Board

RESOLUTION

No. 4-02

A Resolution With Respect to All Indian Point Plants

WHEREAS, in light of the events of September 11, 2001, the Town Board is desirous of ensuring that appropriate security arrangements have been made with respect to the protection of the nuclear facility located at the Indian Point site in the Village of Buchanan, within the Town; and

WHEREAS, it is the desire of the Town Board to ensure that the Homeland Security Offices of the federal, state, county and local governments have addressed all the areas of concern of the Board;

NOW, THEREFORE, BE IT RESOLVED, that the Town Board hereby requests the Homeland Security Offices of the federal, state and county governments to certify that the following steps have been taken:

1. The 100% protection by air, land and water of the facility, including a "no-fly zone" and/or increased radius of anti-aircraft protection in the no-fly zone.
2. Maintain constant Coast Guard/Navy patrols.
3. Continue National Guard security at the site.
4. Install and/or maintain proper surveillance at check points at all entry points.
5. Revise, review and improve the evacuation plan and increase the radius of said plan.
6. Appropriately and timely address all questions raised by the community and its citizens about the operation and security of the nuclear plants.
7. Fully review and adopt a plan to safely remove the 600 tons of spent radioactive fuel rods presently located on the site to another location so that the site can truly be returned to greenfields at the appropriate time.
8. Conduct a series of public informational meetings within the community to hear the concerns of the citizens and to inform the citizens of the above.

Indian Point Plants Resolution

Page 2

BE IT FURTHER RESOLVED, that the Town Board requests immediate action and attention with respect to these issues; and

BE IT FURTHER RESOLVED, that the Town Clerk shall immediately forward a certified copy of this Resolution to the Homeland Security Offices of the federal, state and county governments.

**BY ORDER OF THE TOWN BOARD
OF THE TOWN OF CORTLANDT
JO-ANN DYCKMAN, Town Clerk**

Adopted on January 15, 2002

At a Regular Meeting

Held at Town Hall



INTERIM REPORT

on the

Evacuation Plan

for the

Indian Point Nuclear Facility

February 20, 2002

Richard Brodsky
Chairman
Committee on Corporations,
Authorities and Commissions

Paul Tonko
Chairman
Committee on Energy

Interim Report on the Emergency Evacuation Plan for the Indian Point Nuclear Facility

February 20, 2002

Table Of Contents

I. Introduction	4
II Background	5
III. Legal Requirements for County Emergency Evacuation Plans.	6
IV. How The Emergency Evacuation Plan Works.	9
A. Overview	9
B. The Nature Of The Nuclear Danger	9
1. Radiation	9
2. The Mechanisms Of Nuclear Exposure	11
a. Nuclear Explosions	11
b. Release Within The Containment Building	12
c. Release Outside The Containment Building	12
3. The Radioactive Plume	12
C. The Evacuation Travel Time Estimate (ETTE)	13
D. Evacuation Plan Responses	20
1. Classification Of Nuclear Incidents At Indian Point	20
2. Options For Protective Action In The Event Of A Radiation Release	22
V. Analysis Of The Evacuation Plan	23
A. Assumptions Of The Evacuation Plan	23
1. Shadow Evacuation	23
2. Family Separation	25
3. Containment Building V. Spent Fuel Risks	27
4. Return To The EPZ By Emergency Personnel	30
5. Advance Notice To Emergency Officials Of A Radiation Release	32
6. Information Control And Secrecy	34
7. The Consequences Of Sheltering In Place	36
B. Operational Issues Within The Evacuation Plan	37
1. The Plan Relies On Objective Data That Is Outdated And Wrong	37
2. Planning For The Evacuation Of The Transit Dependent	

Population Is Suspect	38
3. The Number And Availability Of Buses Is Unclear	40
4. The Plans' Assumption That Fifty Percent Of The Transit Dependent Population Will Evacuate In The Cars Of Others Should Be Reexamined	41
5. No Planned Alternatives For Contaminated Water Supply	41
6. Protection Of Pre-school Children Is Inadequate	42
7. Potassium Iodide Is Provided Only To Emergency Workers	43
8. Evacuation Plans For Colleges Apparently Do Not Exist	44
9. Evacuation Plan Untested	45
VI. Additional Investigation Topics	45
A. The Economic Cost To County, State and Local governments	45
B. The Health Consequences Of Various Radiation Release Scenarios	46
VII. Findings	47

I. Introduction.

Concerns about whether or not the Indian Point Evacuation Plan would actually protect our families and our communities have been expressed for many years. People who want the reactors closed have tended to describe the Plan as inadequate: People who want the reactors to remain open tended to describe the Plan as adequate. There had never been an independent, thorough, and fair analysis of the Plan outside of that polarized debate. The events of September 11 gave new urgency to the need for such an inquiry. Over the past two months that inquiry has occurred, and this Interim Report sets forth what was found.

The evidence, prior experience, and expert opinion all point to one clear conclusion: The Plan as currently drafted and submitted by the County and the State does not protect our families and our communities and does not meet the legal requirement that it “adequately protect the public health and safety”. Repeatedly, clearly, and inarguably this Plan refuses to recognize the behavioral realities and the physical realities that determine whether or not it will adequately reduce death, injury and economic damage.

The chances of a significant release of radiation from Indian Point are small but the consequences of such a release would be enormous and permanent. In the end, the only valid measurement of the adequacy of the Plan is how well it reduces the numbers of deaths and injuries, and the economic damage that results from a release of radiation. The best Plan, well executed, will not offer complete protection. A poor Plan, poorly executed, will reduce the toll below what it would be if no Plan existed. There needs to be a Plan, even if the reactors are shut down. But the Plan must be understood for what it actually does, and then held up against the legal standard that it should adequately protect the public health and safety.

There are those who argue that no Plan can adequately protect us. They may or may not be right. Westchester County Executive Spano is right, however, in saying that we have a responsibility to do our best, and that everyone should cooperate in the effort to produce a good Plan. But he, the Governor and others are wrong when they tell us that the Plan now in place will protect us. It won't. And they are wrong when they assert that a fair and thorough analysis of the Plan, a truthful analysis of the Plan, endangers us. The truth is the only basis for an open, democratic debate, and for decisions on the future of the Indian Point facility that are based on more than economic self-interest or simple fear. We needed the truth about the Plan as the basis

for the debate about the relative risks and benefits of continued operation of Indian Point. That debate can now take place.

II. Background.

The events of September 11, 2001 brought intense scrutiny on the operation of the Indian Point Nuclear Facility. At the request of Assemblyman Richard Brodsky, Chairman of the Standing Committee on Environmental Conservation, an inquiry was begun into one particular aspect of Indian Point operations, the Emergency Evacuation Plan ("The Plan"). After initial work by staff, a hearing was called by the Chairman Brodsky, Chairman of the Committee on Energy Assemblyman Paul Tonko, and Chairwoman of the Committee on Government Operations Roanne Destito. The Hearing was convened in White Plains, New York on December 20, 2001, where the Committees received sworn testimony from State and County officials, the license holder for Indian Point, Entergy, and members of the public. The inquiry continued with document collection and analysis, informal meetings, and telephone interviews with government regulators and public officials responsible for decisions with respect to the plan.¹ Information was also gathered from acknowledged academic and scientific experts. These experts included Dr. Donald Zeigler, professor of geography and political science at Old Dominion University; Dr. Dennis Mileti, director of Natural Hazards Research and Applications Information Center at the University of Colorado, Dr. Michael K. Lindell, Director of the Hazard Reduction and Recovery Center at Texas A&M University and Professor of Construction Science and Landscape Architecture and Urban Planning at Texas A&M University; Dr. John Sorenson, Director of Emergency Management Center and Senior Research Staff at Oak Ridge National Laboratory; and Dr. Thompson, Executive Director at the Institute for Resource and Security Studies.² Some were suggested by Entergy, some by other interested parties. All have distinguished backgrounds and are generally accepted as experts in their fields. A complete list of those documents and interviews is attached in Appendix A. The Plan, and its most important

¹ See Appendix A.

supporting document, the Evacuation Travel Time Estimate ("ETTE"), have been reviewed on a page by page basis, as have the other materials gathered in the course of the investigation.

Government agencies have been generally cooperative with the inquiry. Staffs at FEMA and the Rockland County Emergency Services offices were particularly forthcoming, as was staff of the Entergy Corporation.

III. Legal Requirements for County Emergency Evacuation Plans.

Regulations and guidance documents promulgated by the Nuclear Regulatory Commission ("NRC") and the Federal Emergency Management Agency ("FEMA") are the legal foundations for nuclear facility emergency evacuation plans.³ The initial requirement for evacuation planning came in 1979, when the NRC promulgated 10 CFR Part 50.47, which made the existence of an evacuation plan a condition of the license granted to the private operator of each nuclear power plant in the nation. Subsequently, in 1979, Executive Order Number 12148 instructed FEMA to coordinate and review State and Local evacuation plans.⁴ In 1983 these efforts resulted in the promulgation of FEMA regulation 44 CFR 350, which incorporated and went beyond the requirements of guidance document NUREG 0654/(FEMA REP 1).⁵ FEMA, in 1985 then issued PR-1, an informal guidance document which does not have the force of law or regulation, but is the opinion of FEMA as to how to carry out the requirements of its Part 350 regulations.

² See Appendix A.

³ State law also provides legal authority for radiological emergency evacuation plans. New York State Law authorizes but does not require each County "to prepare disaster preparedness plans." Section 23 of the Executive Law. State law also requires the licensees that run nuclear facilities, in this case Entergy, to be "liable for an annual fee to support state and local governmental responsibilities under accepted radiological emergency preparedness plans related to the facility operated by such licensee." Section 29-c of the Executive Law.

⁴ Signed by President Carter on July 20, 1979.

⁵ "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants," NUREG 0654/ FEMA REP-1 Rev. 1, March 1987.

Over the years, a process has developed wherein FEMA approves the emergency evacuation plans on a two year revolving basis. In so doing, it seemingly requires an "Annual Letter of Certification" from the State every January 31st.⁶ The State, in turn, requests a voluntary Letter of Certification from Westchester, Rockland, Orange and Putnam, the Counties immediately surrounding Indian Point, who develop and operate the existing emergency plans.⁷ The State requests the letters from the Counties in December, and asks that it receive them no later than January 15, so that the State's required Letter of Certification may include that letter.

The legal requirements the Plan must meet are set forth in the Part 350 regulations. These include the primary and most important requirement that the Plan "adequately protect the public health and safety."⁸ The regulation also includes sixteen "planning and preparedness" standards for use by FEMA in their review and approval of emergency plans and preparedness.⁹ Federal, State and County officials are clearly confused about their responsibilities under the regulations and guidance documents, which are themselves unclear and confusing. While PR-1 is cited by both County and State officials as the basis for their decisions and responses, it is not binding, nor is it consistent with the regulations it seeks to explain. It requires less information than is set forth in the Part 350 regulations (only seven of sixteen planning criteria are sought), and simultaneously requires them to do things that do not appear in Part 350. FEMA itself now concedes that there is no statutory or regulatory basis for the "requirement" of a Letter of Certification. "When States and Counties opt to participate in the REP program they do so voluntarily and submit Annual Letters of Certification voluntarily... There is no regulatory or statutory requirement for an ALC per se."¹⁰

⁶ PR-1, Section C, "The State submission of the Annual Letter of Certification to the FEMA Regional Director should be made by January 31 of each year."

⁷ The request letter from SEMO to the County "request[s] your support" because "the Governor must submit" the Letter. Emphasis added. Letter from Edward F. Jacoby, Jr. to Chris Kozlow, Deputy Commissioner Westchester County Office of Emergency Management dated December 17, 2001.

⁸ 10 CFR Part 50.47 (a)(2).

⁹ 44 CFR 350.5(a).

¹⁰ Reply memo from Crane Miller, Office of General Counsel. FEMA To Richard L. Brodsky, Chairman of the Committee on Corporations, Authorities and Commissions on February 11, 2002.

Furthermore, the Governor and the County Executives sometimes argue that the County and State Letters do not relate the Plan's ability to actually protect the public, and are merely recitations that drills took place and deficiencies were identified and corrected.¹¹ However, FEMA acknowledges that the Letters are part of the FEMA review process, for which the legal standard is whether or not the Plan is "adequate to protect the public health and safety."¹² FEMA states, "The ALC is one of our various means to determine whether plans and preparedness provide "reasonable assurance" that the health and safety of the public can be protected if there is an accident."¹³

For the Governor and County Executives to assert that that their letters are not approvals of the Plans' ability to protect the public is to contravene the clear language of the regulations and FEMA's own explicit statements. FEMA does not need a Letter to tell them that drills took place. It does need information that it will use in its own process for approval of the Plan. It is clear that the Governor and the County Executives are now and have been telling FEMA that the Plan would protect residents in the event of an actual evacuation. A Certification that inaccurately represents the plan as adequate may be in violation of Federal law.

The current legal status of the Plan is as follows: Contrary to assertions by the Governor that the last FEMA approval took place in 1996, the Plan was last reviewed and certified by FEMA as adequate to protect the public health and safety on July 25, 2001. In that process FEMA received Letters of Certification from the State and the Counties, and to some extent based their approval on those Letters.¹⁴

¹¹ Letter from County to SEMO dated January 14, 2002. Letter from Riverkeeper and Assemblyman Brodsky dated January 11, 2002.

¹² 44 CFR Part 350.5 (b).

¹³ Reply memo from Crane Miller, Office of General Counsel. FEMA To Richard L. Brodsky, Chairman of the Committee on Corporations, Authorities and Commissions on February 11, 2002.

¹⁴ "Current status: there is reasonable assurance that the plan is adequate to protect the safety and health of the public. [as of] July 25, 2001. 8. When was it last certified or determined as adequate? July 25, 2001." Reply memo from Crane Miller. Office of General Counsel, FEMA To

IV. How The Emergency Evacuation Plan Works.

A. Emergency Evacuation Plan Overview.

The Radiological Emergency Evacuation Preparedness Plan (“the Plan”) for the Indian Point Facility is “designed primarily to control radiation exposures to the general public from the plume exposure pathway.”¹⁵ The purpose of the plan is to “ensure that the offsite impact” of a radioactive release are “minimized” through an effective use of County resources, including partial or total evacuation of affected residents.¹⁵ The Plan contains options for protection of residents within a ten mile Emergency Planning Zone (“EPZ”) surrounding Indian Point¹⁶ in the event of a radiological release emergency. It is divided into four plans, one for each of the Counties of Westchester, Rockland, Orange, and Putnam.

B. The Nature of the Nuclear Danger

1. Radiation.

The Plan discusses the dangers and consequences of radiation generally and around Indian Point specifically. Nuclear radiation is invisible and odorless and permeates its surroundings. The Plan states that the radioactive materials that would be released would be primarily of radioactive iodine, xenon, and krypton gases.¹⁷ The Plan does not seem to consider

Richard L. Brodsky, Chairman of the Committee on Corporations, Authorities and Commissions on February 11, 2002.

¹⁵ Indian Point Radiological Emergency Preparedness Plan for Westchester County, May 2000 (“Westchester County Emergency Plan”) at I-4.

¹⁶ The ten and fifty mile EPZs were designated based upon a joint NRC – EPA study entitled, “Planning Basis for the Development of State and Local Government Radiological Emergency Preparedness Plans in Support of Light Water Nuclear Power Plants.” NUREG-0396, 12/78. Adopted by NRC and FEMA in “Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants.” NUREG-0654 FEMA-REP-1.

¹⁷ Westchester County Emergency Plan at I-4.

the release of other nucleotides, such as cesium and strontium, which are present in dramatically greater quantities and concentrations in spent fuel.

Exposure to a radiation release from Indian Point nuclear facility could result in serious short and long-term human health effects and even death.¹⁸ Radiation can cause immediate health effects such as severe burns and vomiting.¹⁹ Exposure also causes long-term health problems such as cancer.²⁰ In case of a major radiation release death can occur instantly, or as many as sixty days.²¹ The Plan states that the principal health consequences to residents associated with a radiation release from Indian Point are:

(a) whole body external exposure to gamma radiation from the plume and from deposited materials; and

(b) inhalation exposure from the passing radioactive plume."²²

Human exposure could occur over from hours to days after the radiation release.²³

¹⁸ "Estimates of the Financial Consequences of Nuclear Power Reactor Accidents." Sandia Report: NUREG/CR-2723 (September 1982), David R. Strip at 3. The Sandia Report states that "(a)ll persons exposed to greater than 615 rads are assumed to have a 100% mortality rate" Additionally radiation "dose to bone marrow at which 50% of the exposed population is expected to die within 60 days." These calculations are based off of the Calculations of Reactor Accident Consequences, Version 2 ("CRAC2"). CRAC2 is a program designed to measure the health effects of nuclear radiation. CRAC2 measures the health effects of five major radiation release events. See also "Nuclear Accidents Learning From Japan." Fire Engineering (November 2000) Anthony M. Gaglierd. at 62 and 65. Gaglierd's findings also support the Sandia Report. In several case studies, Gaglierd found that persons that were exposed to radiation over 650 rad died within 30 days in all cases.

¹⁹ "Estimates of the Financial Consequences of Nuclear Power Reactor Accidents." Sandia Report: NUREG/CR-2723 (September 1982), David R. Strip at 3. The CRAC2 analysis also finds that radiation exposure that does not result in death are subject to early injuries such as "prodromal vomiting, skin illness, and immunological system impairment."

²⁰ See "Estimates of the Financial Consequences of Nuclear Power Reactor Accidents." Sandia Report: NUREG/CR-2723 (September 1982) David R. Strip, at 3. Radiation exposure causes latent cancer fatalities which begin to occur ten years after the initial exposure.

²¹ "Estimates of the Financial Consequences of Nuclear Power Reactor Accidents." Sandia Report: NUREG/CR-2723 (September 1982) David R. Strip at 3.

²² Westchester County Emergency Plan at I-4.

²³ Westchester County Emergency Plan at I-4.

The health impacts of radiation on children are a special concern. The primary risk to children is their susceptibility to thyroid cancer. Exposure to radiation from the Chernobyl accident in 1986 caused an increase in thyroid cancer among children that was “quite significant”²⁴ and that children exposed to the Chernobyl accident at a young age, particularly up to ten years old, have a high risk of developing thyroid cancer.²⁵ These cases “were likely to have been caused by direct external or internal exposure to short-lived (between 20 hours and 8 days) radio-active fallout.”²⁶

The Plan does not directly calculate the number of human deaths or injury, or the economic losses associated with a release of radiation. Such death, injuries, and damage will occur on a sliding scale depending on the severity and swiftness of the release of radiation and the success of evacuation or other protective measures. These calculations, as distasteful as they may be, are crucial to an understanding of the consequences of such a release and the adequacy of the Plan. A Plan, no matter how well conceived or executed, that leaves large numbers of dead and injured and billions in damages cannot be said to adequately protect the public health and safety. The absence of such calculations is a serious defect in the Plan and renders it difficult if not impossible to conclude that it adequately protects the public health and safety.

2. The Mechanisms of Nuclear Exposure.

a. Nuclear Explosions

A fundamental assumption, and the first one listed in the emergency plan, is that the “nature of the uranium fuel at the Indian Point nuclear power station precludes the possibility of

²⁴ “Chernobyl is said to affect thousands in a Soviet Region.” Brooke. James.

²⁵ “15 years after Chernobyl: new evidence of thyroid cancer.” *The Lancet* 8 December 2001 at 1965-66.

²⁶ “15 years after Chernobyl: new evidence of thyroid cancer.” *The Lancet* 8 December 2001 at 1965-66.

a nuclear explosion (a weapon-type detonation).”²⁷ There seems little controversy about this conclusion, although non-nuclear explosions are apparently not considered by the Plan.

b. Releases Originating Within the Containment Building

The Plan analyzes only radiation releases that begin within the reactor containment building. It states and that radiation “would almost certainly be contained within the reactor containment building.”²⁸

c. Releases Originating Outside The Containment Building.

The Plan has not considered the consequences of a release of radiation from the spent fuel pools.²⁹ The assumption that the protection afforded by the containment building will always be available is simply wrong, as the spent fuel pools are outside the containment building, have no significant structural protection, and are potential terrorist targets and subject to accidental releases.

3. The Radioactive Plume

The plume is the stream of radiation released into the atmosphere and carried into neighboring communities by prevailing weather patterns. The radioactivity that leaves Indian Point would be “carried by the wind into nearby areas of Westchester County [and] could result in a potential hazard to the health and safety of the general public in the affected areas.”³⁰ The

²⁷ Westchester County Emergency Plan at I-3.

²⁸ Westchester County Emergency Plan at I-3.

²⁹ The Plan seems to only explicitly refer to the containment building, specifically regarding release of different types of radiation when it states that “iodine filters will absorb most of all of the radioactive iodine released.” Westchester County Emergency Plan at I-4.

³⁰ Westchester County Emergency Plan at I-3, 4.

Plan includes provisions for “meteorological monitors” which, when integrated with data from the National Weather Service, “can be used to determine the actual and projected meteorological conditions.”³¹ The Plan assumes that a radiological release will occur “over a period of time” and could move from the two-mile radius around Indian Point up to five miles downwind within four hours.³² It is likely that the radiation would travel five miles in about one half to two hours, and travel ten miles in one to four hours.³³

C. The Evacuation Travel Time Estimate Report

The Plan is based upon, and incorporates a technical and logistical document, the Evacuation Travel Time Estimate Report (“ETTE”) which is the responsibility of and is produced by the licensee.³⁴ The ETTE included in the current plan was published in 1994, and is based on a set of assumptions and on data from that time or earlier. Entergy is about to let a contract for review of the ETTE, a process that will take one year at the very minimum.³⁵ A number of requests for additions and changes in the proposed contract have been made to Entergy, in an attempt to answer many of the questions raised in this Report. Among these were;

- *Impacts on evacuation of shadow evacuation*

³¹ Westchester County Emergency Plan at III-14.

³² Westchester County Emergency Plan at III-20.

³³ “Evacuation Behavior In Response to Nuclear Power Accidents,” Donald Zeigler and James Johnson, Jr., *The Professional Geographer*, May 1984 at 213, citing “Dynamic Evacuation Analyses,” FEMA, 1984.

³⁴ Evacuation Travel Time Estimates for the Indian Point Nuclear Power Station Plume Exposure Pathway Emergency Planning Zone, May 1994, prepared for the New York Power Authority and Consolidated Edison Company of New York, Inc. by HMM Associates (“ETTE”).

³⁵ The ETTE analyzes the time needed to evacuate the general public located in each County within the EPZ. Meeting of Emergency Officials in Rockland County, January 7, 2002. The Contract for the new ETTE has not been let as of the publication of this document.

➤ *Impacts of cell phones, internet or mass media in advance of notification by officials.*³⁶

The ETTE provides the fundamental estimates of the time it will take to evacuate the general population from the EPZ and is an integral component of the emergency plan.³⁷ The ETTE now used was prepared by HMM Associates for Con Edison in 1994.³⁸ It contains a survey of physical, logistical, and otherwise objective data about the communities in the EPZ, and then uses a computer model called NETVAC as the basis for the logistical and evacuation time estimates in the Plan.³⁹ The model accounts for the detailed distribution of vehicle demand, considers the road network, time flows, provides documentation of results, addresses weather, times of day, and population. The NETVAC model generates evacuation time estimates and assumes that the time needed for various components of the evacuation, such as notification, preparation and evacuation overlap, and are not a series of sequential activities.⁴⁰ The authors of the ETTE believe that this “time distribution approach,” although more complex, leads “to more realistic evacuation times.”⁴¹

The Plan uses 1990 census data to determine EPZ population levels. They have not been updated since, perhaps because County officials mistakenly believe that FEMA would not permit

³⁶ Letter to Mike Slobodien, Director Emergency Program, Entergy Northeast, from Richard Brodsky, Chairman of the Committee on Corporations, Authorities and Commissions on January 29, 2002. Appendix B.

³⁷ The Emergency Plan states that the “evacuation travel time estimates have been extracted from the document prepared by HMM Associates, Inc., entitled “Evacuation Travel Time Estimates for the Indian Point Emergency Planning Zone,” November 1993. Westchester County Emergency Plan at A-1. The Plan provides “total evacuation time requirements for evacuating different areas of the County.” Westchester County Emergency Plan at III-22.

³⁸ Con Edison and Power Authority of the State of New York (“PASNY”) were the nuclear facility operators for Indian Point 2 and 3 at that time. Entergy Nuclear Northeast is the current nuclear facility operator.

³⁹ The expert identified for the computer modeling is Professor Sheffi of MIT’s Center for Transportation Studies. ETTE at 2-9.

⁴⁰ ETTE at 2-9.

⁴¹ ETTE at 2-9.

them to do so.⁴² Mr. Christopher Kozlow, Deputy Commissioner of the Westchester County Emergency Management says, “FEMA stringently states you must use the census data from New York Census Bureau.”⁴³ This is not true. The FEMA – NRC guidance document states that the number of “permanent residents shall be estimated using the U.S. Census data or other reliable data adjusted as necessary for growth.”⁴⁴ As a result, the Plan erroneously gives the number of permanent residents in the EPZ as 279,412 people and the number of households as 92,393. Use of currently available data gives a current EPZ population estimate of at least 367,149 or about 26 % greater than stated in the Plan. These also may be significantly undercounted because the data sources are so old.

Table 1: EPZ Population Comparisons⁴⁵

Population	In Persons
“Plan” Estimates	279,412
2000 Estimates	367,149
Difference	87,737

The population that must be evacuated is larger, estimated at between 310,000 and 390,000 persons, depending on the times of day and year of the evacuation, in order to include transient populations.⁴⁶

Transient populations, including hotels/motels, major employers (greater than fifty people), and visitors to parks were estimated from published statistics and a phone survey

⁴² Testimony of Chris Kozlow, Hearing Transcript at 14-15.

⁴³ Testimony of Chris Kozlow, Hearing Transcript at 16.

⁴⁴ NUREG 0654/FEMA REP-1 at 4-2. Emphasis Added

⁴⁵ Id. The Plan utilizes 1990 U.S. Census data. Current estimates is based on 2000 U.S. Census data.

⁴⁶ ETTE at 6 –1 to 6-2.

conducted in 1993. The transient population in the EPZ ranges from 8,800 to 69,800 people, depending upon the time of day and time of year.⁴⁷

Population estimates for special facilities which are defined as schools (from day care to college), day and permanent residents, camps, hospitals, rest homes, group homes, convents, monasteries, and correctional facilities were collected from phone surveys.⁴⁸ The special facilities population ranges from 22,700 to 89,797 people, depending upon the time of the year.⁴⁹

The Plan's estimates of vehicle usage within the EPZ are conjectural and internally inconsistent. While DMV data shows households within the EPZ averaging three cars, the Plan assumes, "all households having more than one vehicle will use one automobile."⁵⁰ This assumption is based upon the tendencies that families leave as a family unit. It is unclear whether recent increases in auto insurance and use will change that. More importantly, the Plan has no load factor to account for families for reassembling in the zone. The Plan now assumes that the family unit will be intact with all cars at home at the time of evacuation. Both premises cannot be true. If families evacuate in one car the Plan must take into account the additional travel caused by family members trying to reassemble. This internal inconsistency must be remedied.

The NETVAC model, in calculating evacuation times, addresses fair weather conditions, when roadways are clear and dry and visibility is unimpaired, and adverse weather, when rain or snow storms impairs visibility and roadway capacity.⁵¹ The ETTE assumes that adverse weather reduces roadway capacity by twenty percent in summer and by thirty percent in winter.⁵² Based upon all of the data collected, the ETTE analyzes four possible evacuation scenarios.

⁴⁷ Winter Weekday School in Session (Early Dismissal and Direct Evacuation) - 19,059 ETTE at Table B1-1, B1-2; Winter Night - 8,821, ETTE at Table B1-3; Summer Weekend-Holiday - 69,781, ETTE at Table B1-4.

⁴⁸ ETTE at 2-1.

⁴⁹ Winter Weekday School in Session (Early Dismissal) - 29,327, ETTE at Table B2-1; Winter Weekday School in Session (Direct Evacuation) - 89,797, ETTE at Table B2-2; Winter Night - 22,658, ETTE at Table B2-3; Summer Weekend-Holiday - 22,915, ETTE at Table B2-4.

⁵⁰ ETTE at 2.2.

⁵¹ ETTE at 2-11.

⁵² ETTE at G-O.

Winter Weekday – School in Session Early Dismissal.

Weekdays from September to June when school is in session and the work force is at full daytime level, which allows school children to return home and rejoin their families prior to evacuation.⁵³

Winter Weekday – School in Session Direct Evacuation.

Weekdays from September to June when school is in session and the workforce is at full daytime levels.⁵⁴

Winter Night.

Typical night from September to June when permanent residents are at home and workforce is at night level.⁵⁵

Summer Weekend – Holiday.

Daytime period when permanent residents are home and major work places are at typical summer weekend holiday levels.⁵⁶

The NETVAC computer model, which generated the ETTE estimates, predicted different evacuation scenarios, consisting of one, two, or multiple waves for in each County. A one wave evacuation presumes that those who own their vehicles and the transit dependent will successfully evacuate simultaneously. Multiple wave evacuation scenarios, which require vehicles to return to evacuate special populations, may be required for “institution(s) or location(s) having either a residential population of 15 or more people or having sizable, but temporary, attendance at predictable times,” such as schools, hospitals, nursing homes, parks, convents, monasteries and correctional facilities and those in wheelchairs or requiring stretchers.⁵⁷

⁵³ ETTE at 2-11.

⁵⁴ ETTE at 2-11.

⁵⁵ ETTE at 2-12.

⁵⁶ ETTE at 2-12.

⁵⁷ Westchester County Emergency Plan at N-4.

A one wave scenario is assumed for all evacuation scenarios in Orange County.⁵⁸ In Rockland County, the ETTE says that a one wave evacuation is assumed, except for a multiple wave evacuation for the special facilities located there.⁵⁹ For Westchester and Putnam Counties, a one wave evacuation is assumed for all scenarios except “winter weekday – school in session direct evacuation.”⁶⁰ For this scenario, the ETTE suggests that a multiple wave evacuation would be needed. In each of these multiple wave evacuation scenarios, it is assumed that vehicles would have to return for people in special facilities and the transit dependent population.⁶¹ In Westchester, three waves would be necessary for evacuation of those people who require vehicles that can accommodate wheelchairs or stretchers.⁶²

The population is divided into two categories, the general population, and the transit dependent. The general population is defined as people permanently residing with the EPZ (not including residents of nursing homes or long-term health facilities).⁶³ For the sake of clarity, these residents will be referred to as the “self-evacuating”, persons who have access to automobiles and will evacuate themselves to safety. The “transit-dependent” population is defined as people who do not have access to an automobile for the purpose of leaving the EPZ at the time of an evacuation,⁶⁴ and who will rely on public transportation to reach safety. In this group is the “hard to move” population who because of incarceration or infirmity need special arrangements and vehicles. They include both those in institutions and those who still live at home.

⁵⁸ ETTE at 2-7.

⁵⁹ ETTE at 5-3 and 2-8, respectively.

⁶⁰ ETTE at 2-5, 2-6.

⁶¹ ETTE at 2-4 to 6.

⁶² ETTE 2-5 to 6.

⁶³ Westchester County Emergency Plan at N-2.

⁶⁴ Westchester County Emergency Plan at N-5.

The transit dependent population requiring evacuation is determined through a mathematical formula, and is estimated 30,505 people in 10,874 households.⁶⁵ The Plan assumes that fifty percent of the transit dependent population will evacuate by ride sharing.⁶⁶ The ETTE predicts a range of evacuation times depending on the time of day and time of year of the evacuation.⁶⁷ The text of the ETTE regarding these numbers is confusing and at times contradictory. The estimates include fifteen minutes for notification, fifteen minutes for preparation and between zero and one hundred twenty minutes for mobilization.⁶⁸

It is unclear if the evacuation times include multiple evacuations or one wave evacuations, only. Although the ETTE states that the evacuation time estimates do not include multiple wave evacuations, evacuation time summaries appear to include parts of the EPZ with one wave and multiple wave evacuations.⁶⁹ The estimates “represent the total time for vehicles within the respective areas to leave the area being evacuated.”⁷⁰ The evacuation times for the four scenarios analyzed in the ETTE would increase by an additional one hour and twenty-five minutes for football games at the West Point Military Academy.⁷¹

⁶⁵ ETTE at Table B1-5.

⁶⁶ ETTE at 3-2. Except for certain areas of Ossining and Peekskill where no ride sharing was assumed.

⁶⁷ Westchester County Emergency Plan at III-22.

⁶⁸ ETTE at G-O.

⁶⁹ ETTE at 6-1; ETTE at G-O.

⁷⁰ ETTE at 6-1.

⁷¹ ETTE at G-O.

Table 2: Evacuation Scenarios.⁷²

<u>Evacuation Scenarios for Entire EPZ</u>	<u>Fair Weather</u>	<u>Adverse Weather</u>	<u>Pop. Est.</u>
Winter Weekday – school in session direct examination	5 hrs. 40 min.	7 hrs. 45 min. ⁷³	388,268
Winter Weekday – school in session early dismissal.	5 hrs. 25 min.	7 hrs. 25 min. ⁷⁴	327,798
Winter Night.	5 hrs. 25 min.	7 hrs. 20 min. ⁷⁵	310,891
Summer Weekend – holiday.	5 hrs. 45 min.	6 hrs. 50 min. ⁷⁶	376,798

D. Evacuation Plan Responses

In its own words, the Plan sets forth responses to “radioactive release incidents” that may seriously affect “the public health and safety” of those people who live and work in Counties surrounding the power plant. The Plan is organized into three phases: 1) monitoring and assessment of the scope and magnitude of the radiation release; 2) evaluation of, and decision on which protective action response should be initiated; and 3) implementation of the appropriate protective response option(s).⁷⁷

1. Classification of Nuclear Incidents at Indian Point.

There are four categories of incidents at Indian Point:

- a. Unusual event: Incident with no offsite consequences**, which requires no activation of offsite response or monitoring, but the nuclear facility operators are required to notify

⁷² ETTE at 6-1 to 6-2.

⁷³ Table G1-1, ETTE at G-1, and Table G2-2, ETTE at G-4. The Evacuation Times Summary appendix presents these times as 5:30 and 7:40, respectively.

⁷⁴ Table G1-1, ETTE at G-1, and Table G2-1, ETTE at G-3. The Evacuation Times Summary appendix reduces each of these times by 5 minutes each.

⁷⁵ Table G1-1, ETTE at G-2, and Table G2-3, ETTE at G-5. The Evacuation Times Summary appendix presents these times as 5:20 and 7:10, respectively.

⁷⁶ Table G1-1 at ETTE G-2, and Table G2-4 at ETTE G-6. The Evacuation Times Summary appendix presents these times at 5:40 and 6:50, respectively.

⁷⁷ Westchester County Emergency Plan at III-1.

both the New York State Radiological Emergency Communications Systems (“RECS”) and the Counties.⁷⁸ This type of incident involves “no releases of radioactive material requiring offsite response or monitoring” is expected “unless further degradation of safety systems occur.”⁷⁹

b. Alert: Incident with potential for offsite consequences, which requires nuclear facility operators to notify both the State and Counties who will monitor events closely, however, no release is expected.⁸⁰ Any radiation releases from this type of incident “would be expected to be limited to small fractions” of Environmental Protection Agency (“EPA”) Protective Action Guidelines.⁸¹

c. Site area emergency, which again, requires notification of State and County. The County will immediately start marshalling resources and appropriate emergency personnel including transportation resources on stand by for further instructions if necessary.⁸² Radiation releases from this type of an incident “would not be expected to exceed EPA Protective Action Guideline exposure levels except near site boundaries.”⁸³

d. General Emergency is the fourth possibility, which provides the County with the capability to select any of the four protective response options.⁸⁴ The events leading to this emergency level “involve actual or imminent substantial core degradation or melting with potential for loss of containment integrity.”⁸⁵ Radiation releases from this type of incident are “could be reasonably expected to exceed EPA Protective Action Guideline exposure levels offsite for more than the immediate site area.”⁸⁶

⁷⁸ Westchester County Emergency Plan at 5-1.

⁷⁹ Westchester County Emergency Plan at 5-1.

⁸⁰ Westchester County Emergency Plan at 5-1.

⁸¹ Westchester County Emergency Plan at 5-1.

⁸² Westchester County Emergency Plan at 5-2.

⁸³ Westchester County Emergency Plan at 5-1.

⁸⁴ Westchester County Emergency Plan at 5-3.

⁸⁵ Westchester County Emergency Plan at 5-1.

⁸⁶ Westchester County Emergency Plan at 5-1.

2. Options for Protective Action in the Event Of A Radiation Release.

The Plan then presents the County Executive and Emergency Officials with four possible protective action options depending upon the severity of the radiation release, which will determine which option to exercise. The County Executive can implement more than one of the protective actions at the same time, or select a protective action or actions for specific at-risk populations.⁸⁷

The four protective responses are: Initial Precautionary Operations; Selective Sheltering; General Sheltering; and General Evacuation for people within the ten mile EPZ.

- a. Initial precautionary operations include temporary closure of tourist areas, schools within the 10 mile EPZ, establishment of traffic control check points, marshalling transportation resources, and activating the emergency broadcast system.⁸⁸
- b. Selective sheltering would be exercised for those individuals who could not be safely moved. Primary locations for implementing selective sheltering is FDR Veterans Administration Hospital in Montrose, the Hudson Valley Hospital Center of Peekskill/Cortlandt and the Sing Sing Correctional Facility.⁸⁹
- c. General sheltering will be used in a “puff-type radiological release defined as a concentrated release of radioisotopes of short, limited duration.”⁹⁰
- d. General evacuation of the ten mile EPZ would only occur in a general emergency and includes:
 - i) notification to the public to evacuate via television and radio;
 - ii) establishment of traffic controls and mobilization of emergency personnel;
 - iii) monitoring of evacuation routes; and
 - iv) evacuation of transit dependent populations and hard to move populations.⁹¹

⁸⁷ Westchester County Emergency Plan at III-21.

⁸⁸ Westchester County Emergency Plan at III-21.

⁸⁹ Westchester County Emergency Plan at III-21.

⁹⁰ Westchester County Emergency Plan at III-22.

⁹¹ Westchester County Emergency Plan at III-23.

V. Analysis of the Evacuation Plan.

A. ASSUMPTIONS IN EVACUATION PLAN

The Plan contains a series of assumptions upon which its calculations and actions are based. Some of these assumptions are clearly inconsistent with experience, evidence, and expert opinion, and, until corrected, remove the Plan from reality and practical ability to actually protect the public health and safety.

1. Shadow Evacuation.

The Plan assumes that, in the event of an evacuation within the EPZ, there will be no evacuation by the general public outside the EPZ ("shadow evacuation"). All estimates of traffic load, road capacity and evacuation times within the EPZ assume no change in behavior by those outside the Zone.

Emergency officials acknowledge that the Plan assumes that no shadow evacuation will take place. The Plan "presumes that [the general public] will stay put outside the ten mile [zone]", according to Dan Greeley, Assistant Director, Rockland County Emergency Services.⁹² Mr. Kozlow indicated that there will be only "regular heavy traffic."⁹³ Accordingly, all calculations of evacuation times, road capacities, and other logistical concerns assume no additional usage or loads by those outside the zone who may decide to evacuate without either instruction or permission from authorities to do so.⁹⁴

The first research into shadow evacuation was done by Dr. Zeigler, who also coined the phrase.⁹⁵ According to Dr. Zeigler, the term shadow evacuation

⁹² Testimony of Dan Greeley, Hearing Transcript at 45.

⁹³ Testimony of Chris Kozlow, Hearing Transcript at 47.

⁹⁴ The Plan through the ETTE considers, "the traffic conditions on the outbound links (i.e., travel speeds and presence of vehicle queuing or congestion) . . . based on accepted traffic flow relationships. ETTE at 2-10.

⁹⁵ "Evacuation Behavior in Response to Nuclear Power Plant Accidents" by Dr. Zeigler at 207.

“refers to the tendency of an official evacuation advisory to cause departure from a much larger area than was originally intended under the threat of a nuclear emergency. What we stressed in our research is that nuclear emergencies are different from other emergencies because of the dread people associate with a difficult to comprehend threat, ionizing radiation, and because this hazard agent is imperceptible to the senses except in large doses.”⁹⁶

Dr. Zeigler’s original work was based on events surrounding the Three Mile Island nuclear disaster in the late 1970’s, and the community’s response to the government calls for a limited evacuation.

“The emergency at Three Mile Island gave us our first opportunity to study the human response to a nuclear power plant accident. In short, the Pennsylvania governor’s evacuation advisory (note, it was not an order) should have precipitated the flight of only 3,400 people (pregnant women and pre-school age children within five miles of the plant); instead, a total of 144,000 people (an NRC figure) evacuated the surrounding region from 40 miles away and even farther. Furthermore, they fled a record distance of 100 miles. Never before had such a minor advisory resulted in such a large and geographically widespread evacuation response.”⁹⁷

Dr. Zeigler concluded “limiting evacuation planning to the 10-mile plume exposure EPZ would be under-planning for a nuclear accident because so few of the evacuees would actually originate in that zone.”⁹⁸

Other noted experts concur. Dr. Sorenson indicates that “some shadow evacuation will occur.”⁹⁹ Dr. Mileti stated that it is “critical” that shadow evacuation be factored into emergency planning. Dr. Lindell stated that it is a question of “how much and how far out will it exist, not if it will occur.”¹⁰⁰ Dr. Lindell found that the closer people are to the actual emergency, the more

⁹⁶ Testimony of Dr. Zeigler before a public hearing of the Westchester County Board of Legislators December 13, 2001 at 152.

⁹⁷ Testimony of Dr. Zeigler before a public hearing of the Westchester County Board of Legislators December 13, 2001 at 151.

⁹⁸ “Evacuation Behavior in Response to Nuclear Power Plant Accidents” by Dr. Zeigler at 214.

⁹⁹ Telephone call with Dr. Sorenson on January 24, 2002.

¹⁰⁰ Telephone call with Dr. Michael K. Lindell, Director, Hazardous Reduction and Recovery Center, Texas A & M University on January 28, 2001.

likely they are to evacuate and that the severity of the accident increases the likelihood of evacuation. For example, in the case of hurricane disasters, Dr. Lindell found that between sixty to seventy per cent of the population shadow evacuates.¹⁰¹

There is no factual dispute that the Plan assumes no shadow evacuation. The expert testimony, experience elsewhere, and simple common sense all indicate that significant numbers of people outside the EPZ will evacuate, and that the impact of that phenomenon must be considered in the Plan. The failure of the Plan to deal with shadow evacuation is a fundamental and serious failure, and renders the Plan inadequate to protect the public health and safety.¹⁰²

2. Family Separation.

The Plan assumes that parents will evacuate separately from their in-school children, and meet them later at the designated reception center.¹⁰³ The Plan also assumes children who go to school outside the EPZ, but reside within it, will be picked up by evacuating parents as they leave the EPZ.¹⁰⁴

The Plan seeks to evacuate schoolchildren prior to a public announcement of the need to evacuate, and separately from their families. It states that “school superintendents, college, university and private school administrators within the EPZ in accordance with evacuation procedures developed may evacuate prior to the announcement of a general evacuation,” and that the “County Executive may similarly give advance notice to other areas/institutions (e.g., schools) prior to any public protective action notification (i.e., sirens, EBS, etc.).¹⁰⁵ County

¹⁰¹ Telephone call with Dr. Michael K. Lindell, Director, Hazardous Reduction and Recovery Center, Texas A & M University on January 28, 2002

¹⁰² Doctors Sorenson, Mileti and Lindell insist that the shadow evacuation which will occur can be mitigated by an extremely well worded emergency message consistently repeated through proper channels Telephone call with Dr. Sorenson on January 24, 2002, telephone call with Dr. Mileti on January 28, 2002 and telephone call with Dr. Lindell on January 28, 2002.

¹⁰³ Westchester County Emergency Plan at 4-11.

¹⁰⁴ Westchester County Emergency Plan at 4-11.

¹⁰⁵ Westchester County Emergency Plan at III-23. 4-8.

emergency officials acknowledge that they plan to evacuate schoolchildren separately, and that they are aware of the widespread desire of parents to reunite with their children. "We have already discussed the fact that parent's concerns are their children. I have had many discussions with parents that said I am going to the school no matter what happens," stated Anthony Sutton of Westchester Emergency Services.¹⁰⁶ In view of this information and opinion, it was clearly not well advised for County Executive Spano to raise the specter of the police having to "exercise force" as a means of dealing with the problem, even as it is acknowledged that the County Executive has the responsibility to carry out the plan.¹⁰⁷

Expert opinion tends to support the need to consider the impulse for family reunion in an evacuation plan. Dr. Lindell stated that during a radiological emergency you should not assume that a parent would evacuate during a radiation release incident without their children.¹⁰⁸ Dr. Zeigler noted that it is common for those in emergency evacuation leaving to "flee as family units."¹⁰⁹

However, Dr. Sorenson asserts that if intensive public education is done "it is reasonable to have parents leave a child and then reunite later."¹¹⁰

The Plan also fails to address the situation where parents may have children in multiple schools, which may have different designated reception centers for each child. It is unclear how a parent's natural instinct to protect their children will play out in this particular scenario, and how this response may impact traffic problems both inside and outside the EPZ.

The Plans' assumption that families will not seek to reunite flies in the face of expert opinion, evidence available to emergency officials, and common sense. It may be that parents would not be well advised to seek to reunite with their children. But the evacuation plan is not a blueprint for changing human nature. It ought to deal with the realities of human behavior, not

¹⁰⁶ Testimony of Anthony Sutton, Hearing Transcript at 105-106.

¹⁰⁷ The Journal News, "Spano Says The Evacuation Plan is Sound."

¹⁰⁸ Telephone call with Dr. Lindell on January 28, 2002.

¹⁰⁹ "Evacuation Behavior in Response to Nuclear Power Accidents" at 208.

¹¹⁰ Telephone call with Dr. Sorenson on January 24, 2002.

pretend that an official plan at odds with what we know about family separation in emergencies will somehow prevail. The Plans' failure to include this factor renders it inadequate to protect the public health and safety.

3. Containment Building V. Spent Fuel Risks.

The Plan fails to consider any radiation release from the spent fuel pools.¹¹¹

Reactor fuel that is no longer useful within the reactor is removed and stored at Indian Point in two spent fuel pools, not dissimilar from swimming pools in appearance, which have little structural protection.¹¹² Spent fuel contains different and more toxic radioactive materials than the fuel that goes into the reactors. In November of 1998, the spent fuel pools at the Indian Point nuclear facilities contained 1589 fuel assemblies.¹¹³ The capacity of these pools is 2719 fuel assemblies.¹¹⁴

The Plan does not consider the consequences of a release from the spent fuel pools asserting that radiation "would almost certainly be contained within the reactor containment building."¹¹⁵ Similarly, the Plan does it make any dosage or plume calculations based on a release from the spent fuel pools, although such release is likely to contain more dangerous nucleotides. Given the recent concern expressed by Federal officials about terrorist attacks it is useful to point out that such an attack could result in a large, non-nuclear explosion which would seriously affect both dosage and plume behaviors.

There has been an examination of the consequences of a release originating in the spent fuel pools.¹¹⁶ The study and its author Dr. Thompson assert that the inventory of cesium-137 in

¹¹¹ Westchester County Emergency Plan at I-3.

¹¹² "Thompson Declaration in Support of a Petition by Riverkeeper, Inc." 7 December 2001 at 7, III-2

¹¹³ "Thompson Declaration in Support of a Petition by Riverkeeper, Inc." 7 December 2001 at III-2.

¹¹⁴ "Thompson Declaration in Support of a Petition by Riverkeeper, Inc." 7 December 2001 at III-2.

¹¹⁵ Westchester County Emergency Plan at I-3.

¹¹⁶ "Thompson Declaration in Support of a Petition by Riverkeeper, Inc." 7 December 2001.

a nuclear facility is a valid indicator of the potential consequences of a release of radioactive material from that facility. Cesium is a volatile and dangerous material that could be released during a pool fire, which itself could be caused by a terrorist attack similar to the World Trade Center tragedy, or by a loss of water coolant from the pools.¹¹⁷ It is estimated that up to 100% of the cesium in the Indian Point pools could reach the atmosphere during a pool fire for three reasons: it is volatile, a pool fire could involve all the fuel in the pool, and because pool buildings are not designed as containment structures.¹¹⁸

An estimate of the amount of cesium in the two fuel pools is 810 kilograms.¹¹⁹ This is compared to the 134 kilograms of cesium in the active cores of Indian Point, and to 27 kilograms released into the atmosphere in Chernobyl.¹²⁰ If even a small portion of the cesium in the Indian Point spent fuel pools were released into the atmosphere, it would cause enormous public health and economic damage of a kind impossible to repair.

NRC staff has considered the likelihood and consequences of a water loss from a high-density pool.¹²¹ Water loss could result from any of the following: acts of malice or insanity by persons outside or inside the station boundary; an aircraft impact; dropping of fuel transfer cask or shipping cask; a severe accident at a nearby reactor or spent fuel pool which, through the spread of radioactive material and other influences, precludes the ongoing provision of cooling

¹¹⁷ "Thompson Declaration in Support of a Petition by Riverkeeper, Inc." 7 December 2001, at 7, at III-3. It should be noted that Entergy officials strenuously dispute the likelihood of a release caused or exacerbated by a jet fuel fire, on the grounds that the combustion temperature of such a fire will be lower than the burn or vaporization temperature of the radionucleotides.

¹¹⁸ "Thompson Declaration in Support of a Petition by Riverkeeper, Inc." 7 December 2001, at 7, at III-3.

¹¹⁹ "Thompson Declaration in Support of a Petition by Riverkeeper, Inc." 7 December 2001, at 7, at III-5.

¹²⁰ "Thompson Declaration in Support of a Petition by Riverkeeper, Inc." 7 December 2001, at 8, at III-6.

¹²¹ "Thompson Declaration in Support of a Petition by Riverkeeper, Inc." 7 December 2001 at 11, at IV-8.

and/or water make-up to the effected pool, an explosion inside or outside the station buildings; an earthquake.¹²²

NRC staff concluded that a fire is inevitable if the water level falls to the top of the racks. Neither the NRC, nor any other entity, has performed a study of the potential for a pool fire that addresses all of the causes and modes of water loss that are mentioned above.¹²³

The failure of the Plan to consider either the pathways or the consequences of a release from the spent fuel pools is a serious and fundamental deficiency in the Plan. The failure to consider the consequences of a spent fuel release, however, are not diminished by the well-founded observation that the Plan need not consider the originating incident. The consequences of a spent fuel release are different than one occurring in the containment building both in rapidity and nature of the radiation release. The Plan's consideration only of releases that begin in the containment building gives a false sense of security. Clearly the containment building will give significant additional time to evacuate the EPZ. Conversely, its absence will make a fast release more likely, reducing the chance for a successful evacuation. Equally significant, the failure to consider the release of large amounts of radionucleotides concentrated in the spent fuel undermines the validity of the dosage calculations, and the plume pathway. These concerns are heightened by the possibility of an explosion, albeit a non-nuclear explosion, within the spent fuel pools. The Plan's refusal to consider a spent fuel release renders it inadequate to protect the public health and safety.

¹²² "Thompson Declaration in Support of a Petition By Riverkeeper, Inc." 7 December 2001, at 11, at. IV-9.

¹²³ "Thompson Declaration in Support of a Petition by Riverkeeper, Inc." 7 December 2001 at 11, at. IV-10.

4. Return to the EPZ By Emergency Personnel

The Plan assumes that all or most emergency workers, including school personnel, bus drivers and others, will return to the EPZ both before and during an actual radiation release.

While officials assert that emergency personnel will return to the EPZ, there has been no systematic or reliable attempt to calculate the percentage of bus drivers, school personnel and others who will stay are available in the event of an evacuation. County officials offer assurances that appear to be based on nothing but hope. When asked whether or not Westchester officials had verified the number of individuals who would report for duty in case of a nuclear disaster, Mr. Kozlow said “No.”¹²⁴ In spite of the lack of reliable information, however, when asked what percentage of drivers would return, Mr. Kozlow testified that “one hundred percent” would return.¹²⁵

The County’s’ failure to poll bus drivers on this question was noted by the owner of a bus company who is contractually obligated to provide buses and drivers for the evacuation states that, “I pulled sheets that when they talk about training drivers, polling drivers. My drivers have never been polled.”¹²⁶

Rockland County Emergency Management officials seemed more realistic in their assumptions, and felt that they had the resources to execute the Plan with a reduced percentage of drivers, even if it delayed evacuation times. Dan Greeley, Assistant Director of Rockland County Emergency Management stated, “Let’s take it down to 50% of the bus drivers not showing up. It will take twice as long to get the people out of that area that depends on buses. We recirculate them into an area. That has to be taken into consideration also and we understand that.”¹²⁷ Director of Rockland County Emergency Management, Mr. Gordon Wren

¹²⁴ Testimony of Chris Kozlow, Hearing Transcript at 28.

¹²⁵ Testimony of Chris Kozlow, Hearing Transcript at 29.

¹²⁶ Testimony of Joan Corwin, Hearing Transcript at 159.

¹²⁷ Testimony of Mr. Greeley , Hearing Transcript at 54.

states, "And if we are short of firefighters...we will use mutual aid from outside our area to bring in additional firefighters."¹²⁸

Expert research has attempted to understand the willingness of emergency evacuation staff to participate in an emergency evacuation plan when these professionals are conflicted by their own commitments to their families who also live within the EPZ.¹²⁹ In a research study of Long Island emergency workers, sixty-eight percent of firefighters (291) and seventy-three percent of bus drivers (246) indicated family obligations would take precedence over emergency duties.¹³⁰ However, Dr. Lindell believes a substantial percentage of emergency workers would return to the EPZ zone during the evacuation¹³¹

The events of September 11 appear to have increased the confidence of emergency officials that needed personnel would return to the EPZ. Westchester County Deputy Commissioner Kozlow states, "the world has changed. Things happened on September 11th that we just never planned for. Human nature took over. People came down there and wanted to help out. It was a hazard. People showed up anyway after being told to stay away."¹³² Mr. Greeley agrees with Mr. Kozlow and states, "There were a number of emergency respondents that just wanted to come and help. We had to say guys go home, if we need you we'll call you. I foresee that actually God forbid we ever have a nuclear power plant emergency within New York State or any place else in the United States or the world per se that people, the emergency responders will respond effectively to an emergency."¹³³ While the events of September 11 are

¹²⁸ Testimony of Mr. Wren , Hearing Transcript at 54.

¹²⁹ "Emergency Planning for Nuclear Power Accidents," Paul Gunter, Director Reactor Watchdog Project, NIRS, July 13, 2001 at 2, citing "Evacuation Behavior In Response TO Nuclear Power Plant Accidents," Donald Zeigler and James Johnson, Jr., The Professional Geographer, May 1984.

¹³⁰ "Emergency Planning for Nuclear Power Accidents," Paul Gunter, Director Reactor Watchdog Project, NIRS, July 13, 2001 at 2, citing "Evacuation Behavior In Response TO Nuclear Power Plant Accidents," Donald Zeigler and James Johnson, Jr., The Professional Geographer, May 1984.

¹³¹ Telephone call with Dr. Lindell on January 28, 2002.

¹³² Testimony of Mr. Kozlow Hearing Transcript at 40.

¹³³ Testimony of Mr. Greeley Hearing Transcript at 66 and 67.

important, it should be noted that there was little conflict between the heroic actions of those who sought to help that day and the safety of their families.

Dr. Sorenson believes that drivers will come back.¹³⁴ Dr. Lindell also believes that a “substantial percentage [of emergency workers] would return to the EPZ zone.”¹³⁵

However, according to the testimony from an owner of a bus company, Joan Corwin, she states that her bus drivers are not committed to obtaining training or returning to the EPZ. “It bothers me because there is nowhere on here that says I agree to drive a bus in the event of a nuclear catastrophe. None of my drivers had to sign off on anything like that.”¹³⁶ Adding to the problem is the high turnover rate of these positions, “This sheet from 1992, which I am sure the county has lots of lists with lots of driver’s signatures on it, only four of these people work for me now.”¹³⁷ “They sign up on a voluntary basis. There is supposed to be a training class at the end of January. I have got nine people that signed up for it. They don’t want to do it.”¹³⁸

While there is reasonable disagreement about the level of response, planners should not assume 100% return of emergency personnel. This can and should be corrected through a fair and professional assessment of driver and other personnel attitudes and decisions. Until this is done, the Plan cannot be found to be adequate to protect the public health and safety.

5. Advance Notice to Emergency Officials of Radiation Release.

*The Plan, in its evacuation scenarios, assumes that there will be a significant amount of time between notification of government officials of the need to evacuate and the actual radiation release.*¹³⁹

¹³⁴ Telephone call with Dr. Sorenson on January 24, 2002.

¹³⁵ Telephone call with Dr. Lindell on January 28, 2002.

¹³⁶ Testimony of Joan Corwin, Hearing Transcript at 160.

¹³⁷ Testimony of Joan Corwin, Hearing Transcript at 160.

¹³⁸ Testimony of Joan Corwin, Hearing Transcript at 161.

¹³⁹ Westchester County Emergency Plan at 5-4 - 5-6. Testimony of Chris Kozlow, Hearing Transcript at 56.

Emergency Officials rely on receipt of at least several hours between the initial activation of emergency operations and the actual release of radiation from Indian Point, up to “14, 16, 24 hours.”¹⁴⁰ Mr. Kozlow indicated that there is an “assumption that there is lead time with the utility.”¹⁴¹ This assumption is the basis for the assertion that the populace can be safely evacuated. It is undisputed that there are also release scenarios that do not provide such lead time to emergency officials. Some of these scenarios are accident based, but a quick release scenario also can come from a terrorist attack, which the Plan simply ignores. “All this planning is taking place assuming that there is going to be some type of an accident or emergency at the plant not a terrorist attack,” testified Mr. Wren.¹⁴²

The failure to consider the consequences of a spent fuel release, or a terrorist attack, and the assumption of adequate lead time, render the Plan inadequate. The public is entitled to know the likelihood of a successful evacuation for all radiation releases, not just for the ones that give emergency officials the hours of notice they now need to evacuate. In the event of an immediate release or a release with less than hours of lead time residents are likely to be instructed to “shelter, that is to stay or return home while the radiation passes or dissipates. Emergency officials would clearly prefer to evacuate residents, and would chose sheltering only because they could not evacuate in the time available. The public health consequences of that option are unknown, although leaving the EPZ population in the place as radiation moves in is likely to be more damaging than evacuation.

Even the Plan’s strongest supporters admitted that the consequences of shorter lead time were disturbing. In some of the most important and dramatic testimony provided at the Hearing, County officials estimated the percentage of residents who would successfully evacuate with various lead times. Although these officials were making rough estimates of the likelihood of success, the testimony was telling.

If a radiation release was immediate, Mr. Sutton stated that “we may not be able to evacuate everyone out of there instantaneously. Obviously there is a time delay to transport the

¹⁴⁰ Testimony of Anthony Sutton, Hearing Transcript at 100.

¹⁴¹ Testimony of Chris Kozlow, Hearing Transcript at 56.

¹⁴² Testimony of Gordon Wren, Hearing Transcript at 54.

people from the zone.”¹⁴³ Mr. Sutton added that if “probably three hours would be 50% effective and we continue the efforts.”¹⁴⁴ When asked whether or not the plan would get the kids out in an immediate release scenario, Mr. Sutton replied, “No, sir.”¹⁴⁵

The failure to candidly discuss the consequences of a short lead time and the implications of the sheltering option, combined with the failure to consider the consequences of a spent fuel release, combined with the newly acknowledged threat of terrorist attacks render the Plan inadequate to protect the public health and safety.

6. Information Control and Secrecy.

*The Plan assumes that emergency officials can control evacuation information to the general public, and that this control will enable certain populations, such as school children, to be evacuated earlier than other populations.*¹⁴⁶

The plan assumes and County officials agree that school children will be evacuated before evacuation notification is made to the general public.¹⁴⁷ The Plan states that “school superintendents, college, university and private school administrators within the EPZ in accordance with evacuation procedures developed may evacuate prior to the announcement of a general evacuation.”¹⁴⁸ The Plan states that the “County Executive may similarly give advance notice to other areas/institutions (e.g., schools) prior to any public protective action notification (i.e., sirens, EBS, etc.).”¹⁴⁹ Testimony of Emergency officials confirms both the assumption and the importance of this mechanism for carrying out the requirements of the Plan. Anthony Sutton

¹⁴³ Testimony of Anthony Sutton, Hearing Transcript at 60.

¹⁴⁴ Testimony of Anthony Sutton, Hearing Transcript at 61.

¹⁴⁵ Transcript of Anthony Sutton, Hearing Transcript at 62.

¹⁴⁶ Westchester County Emergency Plan at III-23, 4-8.

¹⁴⁷ Westchester County Emergency Plan at III-23; Testimony of Anthony Sutton, Hearing Transcript at 103-105.

¹⁴⁸ Westchester County Emergency Plan at 4-8.

¹⁴⁹ Westchester County Emergency Plan at III-23, 4-8.

of Westchester County stated that “It would be our intention not to sign the sirens until the school children are moved.”¹⁵⁰ Nonetheless, Mr. Sutton acknowledges potential problems with the secret advanced evacuation scenario when he testified that

“I think that on its face it looks as if we are trying to be clandestine in evacuating school children and not notifying the public. Again I will restate it; it is our intention to move the school children as soon as we can hopefully before there is a need to modify the behavior of the general public.”¹⁵¹

In order to accomplish the evacuation of schoolchildren and other transit dependent populations the Plan has officials notifying all sorts of emergency personnel, including school, bus company, and other persons of the need to return to the emergency zone. And of course the schoolchildren will themselves know they are being evacuated. The Plan’s insistence that this can be accomplished in secrecy is contrary to expert opinion, and other evidence available to the responsible officials.

The Plan’s “advance notice” procedure does not take into account the use of cell phones. Dr. Mileti points out that non-official information, such as children utilizing their cell phones, creates an “information soup” that is now always a feature of a public emergency.¹⁵² Dr. Sorenson sees significant problems as well, stating that “it is not a good idea to evacuate any part of the evacuation zone without informing the rest of the people in the zone about what is happening.”¹⁵³

One of the first phenomena observed on September 11 was the immediate and pervasive use of cell phones. This additional public information channel cannot be ignored, if secrecy remains crucial to the evacuation of children and others. Under questioning officials acknowledged that this failure to take the use of cell-phones by students and other members of the general public could seriously impact the ability to effectively evacuate schools before the general public is

¹⁵⁰ Testimony of Anthony Sutton, Hearing Transcript at 103.

¹⁵¹ Testimony of Anthony Sutton, Hearing Transcript at 105.

¹⁵² Telephone call with Dr. Mileti on January 28, 2001.

¹⁵³ Telephone call with Dr. Sorenson on January 24, 2001.

evacuated and is an area that needs to be addressed. Mr. Sutton ultimately admitted that cell phone usage conflicting with the advance notice plan is “a new development that we have to address, yes.”¹⁵⁴

The Plans’ reliance on official secrecy to accomplish its key goal of evacuating schoolchildren, and its failure to even consider the impact of cell phone communication on their ability to control information renders the Plan inadequate to protect the public health and safety.

7. The Consequences of Sheltering In Place.

The Plan assumes that sheltering will adequately protect the public health and safety in the event of a puff or other sudden or quick release of radiation.

The Westchester Emergency Plan states, “If the general sheltering response option is implemented, the general public and special facility administrators should be informed of the following:

1. Remain indoors and close all windows and doors.
2. Turn off all fans, air conditioning equipment and other sources of outside air.
3. Close blinds and drapes.
4. Extinguish fires and fireplaces and close flues.
5. Keep listening to the radio. For heightened awareness of a radiological emergency and for possible protective actions announced via the Emergency Alert System.”¹⁵⁵

Rockland County emergency official Dan Greeley states, “What I am saying is that our plan calls for the people to shelter in place initially. Stay inside the houses. Stay inside the schools, businesses whatever it is.”¹⁵⁶ Mr. Andrew Feeney of SEMO further states in an immediate release, “The protocol is to shelter close in, let public safety officials, marshal resources and then effectuate an evacuation. That’s what the current plan calls for.”¹⁵⁷

¹⁵⁴ Testimony of Anthony Sutton, Hearing Transcript at 106- 107.

¹⁵⁵ Westchester County Emergency Plan at D-1.

¹⁵⁶ Testimony of Dan Greeley, Hearing Transcript at 71 and 72.

¹⁵⁷ Testimony of Andrew Feeney, Hearing Transcript at 96.

Dr. Sorenson stated that there is not much empirical data on the effectiveness of a sheltering option. Dr. Sorenson indicated that without public education, "people tend to evacuate," and that people's response, however, is based upon their knowledge.¹⁵⁸ There seems to be a real breakdown in the Plan under these circumstances. Sheltering is the option in the gravest situation, a rapid or immediate release of radiation. Yet it is likely that a substantial percentage of residents will not stay home.

While there may be a circumstance where sheltering is the only protective measure available to residents, the Plan is silent on the consequences of that scenario, and is silent on the number of people who will ignore the sheltering instruction and evacuate, even if that is a more dangerous act. The Plan needs to take these matters into account, and to candidly discuss the public health consequences of use of the sheltering option. Until it does, the Plan is not adequate to protect the public health and safety.

B. OPERATIONAL ISSUES WITHIN THE EVACUATION PLAN.

In addition to the broad assumptions just discussed the Plan has a series of smaller but important inadequacies that can be identified and seem to be easier to correct than the assumptions.

1. The Plan Relies On Objective Data That Is Outdated And Wrong.

The Plan identifies "previously developed data" as one of three primary resources emergency officials will rely on when assessing and evaluating protective actions in response to a radiation release from Indian Point.¹⁵⁹ This data is population information and evacuation timetables, but also includes related meteorological and radiological data and incident diagnosis and prognosis.¹⁶⁰

¹⁵⁸ Telephone call with Dr. Sorenson on January 24, 2002.

¹⁵⁹ Westchester County Emergency Plan at III-13.

¹⁶⁰ Westchester County Emergency Plan at III-14.

The information in the Plan is based upon outdated sources of information including the 1990 Census figures and a 1994 evacuation travel time estimates. For example, County officials indicated that FEMA requires the use of the 1990 Census data in the evacuation plan.¹⁶¹ This is incorrect. The FEMA – NRC guidance document states when estimating travel times in and evacuation, that the number of “permanent residents shall be estimated using the U.S. Census data or other reliable data adjusted as necessary for growth.”¹⁶² The actual population numbers within the EPZ are about 26 % greater than the Plan states. This is a substantial deviation from reality on a matter crucial to the Plan.

The Plan also relies on 1990 road and development configurations. Large new developments, with the exception of the Palisades Mall, have largely been left out of the Plan. The Plans reliance on such outdated and wrong numbers contributes to its inability to adequately protect the public health and safety. Westchester County officials should become more familiar with FEMA data requirements. Although the new ETTE should correct many of these mistakes that data will take until the end of 2002 to develop. It is not clear how long it will take to turn the new and accurate data into a new and accurate ETTE.

2. Planning for the Evacuation of the Transit Dependent Population is Suspect.

*It is unclear whether the existing bus routes and bus stops will actually evacuate the transit dependent population, because the stops may not be close enough to many such residents, the hard to move population has not been sufficiently identified or planned for, because the obligations of the bus companies seem to be in conflict, and because it is unclear if resources have been made available to heavily transit dependent communities. Evacuation estimates assume normal traffic control and lane configuration.*¹⁶³

The Plan indicates that the transit-dependent population is to be transported by county buses from county bus stops.¹⁶⁴ “We utilize the same stops throughout the plan. It’s not special

¹⁶¹ Testimony of Chris Kozlow, Hearing Transcript at 16.

¹⁶² NUREG 0654/FEMA REP-1 at 4-2. Emphasis added.

¹⁶³ ETTE at G-O.

¹⁶⁴ Testimony of Chris Kozlow, Hearing Transcript at 20.

locations. We are not reinventing the wheel. ...we are not developing new bus routes.”¹⁶⁵ The hard to move population is to be transported by ambulatory vehicles.¹⁶⁶

It is unclear whether the transit dependent population will actually be able to use the public bus system. This population is responsible to go to bus pick-up stops along the normal County bus routes. County officials do not know how many such persons live within walking distance of the stops, nor how many would be senior citizens or others who might have difficulty walking the long distances from their homes to such pick-up stops.

The Plan indicates that the evacuation of transit dependent and “hard-to-move (medical) residents” who are “without access to other transportation” will be coordinated by hospitals and the County Department of Transportation.¹⁶⁷ The Plan focuses on evacuation of hard to move residents who are in institutions. “Any and all patients from special facilities for whom evacuation would have a minimal medical risk will also be evacuated. This operation will be directed by the Hospitals representative and other appropriate County officials.”¹⁶⁸ The special facilities are listed in attachment 3; they are nursing homes, mental health facilities or adult care facilities.¹⁶⁹

The Plan’s ability to transport hard to move residents who still live at home is suspect. In the emergency booklet mailed to residents of the EPZ, there is a postcard for residents who are hard to move but still live at home.¹⁷⁰ Commissioner Kelly of Westchester County Emergency Services states that around 800 postcards have been received. This seems to be an unreliably low number. It is also unclear if the Plan now includes evacuating these residents.¹⁷¹

¹⁶⁵ Testimony of Chris Kozlow, Hearing Transcript at 21.

¹⁶⁶ Evacuation Plan at III-23.

¹⁶⁷ Westchester County Emergency Plan at III- 23-25.

¹⁶⁸ Evacuation Plan at III-23.

¹⁶⁹ Evacuation Plan at Attachment 3.

¹⁷⁰ Evacuation Emergency Booklet.

¹⁷¹ Telephone call with Commissioner Pat Kelly on February 15, 2002.

With respect to the obligations of bus companies, Joan Corwin states that under the Plan she is obligated to evacuate Briarcliff High School and Middle School students. However, she has a prior contractual obligation to evacuate the students of the Chappaqua school system.¹⁷² The Plan does nothing to resolve this conflict of obligations, nor does it protect bus companies from the legal consequences of abrogating their contractual obligations and leaving large numbers of students without transportation.

Finally, the ETTE shows that Ossining and Peekskill have “higher percentages of households without vehicles.”¹⁷³ Although the Plan itself is silent, Westchester County officials gave oral assurances that extra buses were set aside for Peekskill and Ossining.¹⁷⁴

These shortcomings in the Plan must be addressed. If not, they will leave many thousands of residents unable to evacuate, thus rendering the Plan inadequate to protect the public health and safety.

3. The Number and Availability of Buses Is Unclear.

*It is unclear whether the numbers of buses identified by the Plan as available are in fact available to evacuate all schoolchildren.*¹⁷⁵

The Plan identifies companies that provide bus services for the evacuation of school children and segments of the general population. The Plan includes information about the specific types and numbers of traffic vehicles that will be provided by the companies identified. In addition, Westchester County has contractual agreements with these companies to respond in emergency scenarios. It is unclear whether and to what extent the Counties verify that vehicles identified in the Plan are in fact available. It is also unclear how buses that are not available will impact the effectiveness of the evacuation plan, or precisely how the Emergency Officials can

¹⁷² Testimony of Joan Corwin, Hearing Transcript at 165 and 166.

¹⁷³ ETTE at 2-6.

¹⁷⁴ Telephone call with Commissioner Kelly of Westchester County Emergency Services on February 15, 2002.

¹⁷⁵ Testimony of Chris Kozlow, Hearing Transcript at 163.

respond. While County officials insist that the resources are there, there is credible evidence to the contrary. Joan Corwin, after being informed by staff of the number of buses the Plan required her to produce said, "I am supposed to evacuate eight schools with a total of sixty-nine buses. I have forty-eight buses."¹⁷⁶ ... I mean sixty-nine buses, I've only got forty-eight.¹⁷⁷

The County must review its calculations about the number of buses that are actually available.

4. The Plans Assumption That Fifty Percent of Transit Dependent Will Evacuate In The Cars Of Others And Should Be Reexamined.

*It is unclear whether the assumption that fifty percent of the transit dependent population that will be evacuated by car is accurate.*¹⁷⁸

The Plan and its logistics assume that 50% of the transit dependent population will be evacuated by friends or neighbors in their own cars. While experts in the field of emergency management, Dr. Sorenson, Dr. Lindell and Dr. Mileti, indicated they expect at least fifty percent of the transit dependent population to be so evacuated, the Plans reliance on that number should be revisited and objective data developed from state Department of Motor Vehicles data as to what the actual numbers may be, and compared to experience in other emergencies.¹⁷⁹

5. No Planned Alternatives for Contaminated Water Supply.

The Plan does not explicitly provide plans for alternate forms of uncontaminated water supply to be provided to the general public, nor for regular and detailed coordination with authorities responsible for nearby reservoirs.

¹⁷⁶ Testimony of Joan Corwin, Hearing Transcript at 159.

¹⁷⁷ Testimony of Joan Corwin, Hearing Transcript at 163.

¹⁷⁸ ETTE at 3-2.

¹⁷⁹ Telephone call with Dr. Sorenson on January 24, 2002. Telephone call with Dr. Lindell on January 28, 2002. Telephone call with Dr. Mileti on January 28, 2002.

There is also no discussion or plan for providing uncontaminated water supply for people that are within the EPZ, or for diversion and / or shut-off of municipal water supplies including the New York City reservoirs.¹⁸⁰ The Plan calls for thousands of people to leave the EPZ and relocate in surrounding reception centers and surrounding communities. Many of these centers and communities rely upon water that passes through or is stored in close vicinity to the EPZ and may become contaminated. Thus, water inside the EPZ and water outside the EPZ can effectively become part of the ingestion pathway for radiation released from Indian Point. City officials indicate that they will be instructed by State or County emergency officials if there is a need to alter or modify the functioning of the water supply system. They further state that the reason the Plan has no formal mechanism for dealing with the reservoirs is that they are outside the EPZ, and that if radiation contamination becomes an issue the reservoirs would be closed and/or drained to get rid of the radiation.¹⁸¹ The Plan is devoid of details on this issue. The Plans states that

“The County Commissioner of Health shall coordinate efforts with appropriate County, local and public agencies regarding provision and availability of adequate supplies of uncontaminated foodstuffs and water.”¹⁸²

The need to address the problems of potential water contamination is clear; better coordination between government officials and a specific plan for water supply and protection of the reservoirs is needed.

6. Protection of Pre-school Children Is Inadequate.

County officials are genuine in their concern for schoolchildren, and have developed the Plan to initially focus on the need to move schoolchildren out of the EPZ early. Part of that concern is the clear scientific evidence that the dangers of radiation exposure, particularly

¹⁸⁰ Westchester County Emergency Plan at III-23.

¹⁸¹ Telephone call with Commissioner Miele, New York City Department of Environmental Protection. February 7, 2002.

¹⁸² Westchester County Emergency Plan at III-23.

radioactive iodine and its ability to cause thyroid cancer, is especially potent in children. Yet one of the more puzzling inconsistencies in the Plan is its' failure to consider the needs of pre-school children. Indeed, it places them at a greater risk than necessary in order to evacuate the older children already in school. The Plan evacuates schoolchildren first, prior to notice to the general population of the need to take protective measures. The parents of pre-schoolers, who are most medically vulnerable to radiation, will receive no instruction to protect their pre-schoolers during the time that schoolchildren are being evacuated. This seems to unnecessarily endanger our youngest children in the name of evacuating the older. This kind of inconsistent planning renders the Plan inadequate to protect the public health and safety.

7. Potassium Iodide Is Provided Only For Emergency Workers.

The Plan acknowledges that "a major protective action to be considered after a serious accident at a nuclear power facility involving the release of radioiodine is the use of a stable iodine as a thyroid blocking agent to prevent thyroid uptake of radioiodines.", yet it includes only emergency workers as eligible for potassium iodide.¹⁸³

While a radioactivity release will likely include other forms of radiation such as xenon and krypton gases, potassium iodide ("KI") is known to have a protective effect if taken properly for radioiodines.¹⁸⁴ The emergency plan makes no provision for the supply of potassium iodide to anybody other than emergency workers.¹⁸⁵ "Distribution to the general population is not recommended."¹⁸⁶ Although both state and county officials have stoutly resisted KI distribution to the public for years, there has been a dramatic change in this area in the weeks since the

¹⁸³ Westchester County Emergency Plan at 3-71.

¹⁸⁴ Westchester County Emergency Plan at I-4.

¹⁸⁵ Westchester County Emergency Plan at III-71, C-1.

¹⁸⁶ Westchester County Emergency Plan at C-1.

Committees hearings.¹⁸⁷ At the meeting, Mr. Anthony Sutton stated that “it is our understanding and I am going to tell you that we have done a lot of research and there is a lot of conflicting information coming to us.”¹⁸⁸ Because of this conflicting information, the Counties and State have not acted to make KI available to the general population. Both state and county officials seem now to be planning for such distribution. The reasons for the delay are not readily apparent, although there has been speculation that the resistance was based on a reluctance to actually confront the local population with a physical process indicating that the plants may actually be dangerous.¹⁸⁹ It is also unclear when actual distribution will take place. It should be noted that KI is effective only with respect to thyroid cancer, and is not effective in stopping the other cancer and non-cancer health effects of radiation exposure. Great care must be taken to assure that the public understands both the value and limitations of KI.

8. Evacuation Plans For Colleges Apparently Do Not Exist.

The Plan assumes that college students and staff will self-evacuate.¹⁹⁰ “Commuter college students will evacuate themselves.”¹⁹¹ There are several colleges within the EPZ: Marymount (Westchester), West Point, Dominican College, Pace University Briarcliff, and Rockland Community College. The following schools do not currently have a plan, but they are in the process of developing evacuation plans: Marymount, West Point and Dominican College. Pace University Briarcliff states that their plan is to walk to the nearest emergency pickup point, if buses are running. Rockland Community College states it will use county buses to bus students to Orange Community College.¹⁹²

¹⁸⁷ See “Stat unsure pill is Rx for radiation safety; Officials await federal guidelines on dispersal of potassium iodide,” Times Union, December 9, 2001 at D1. Don Maurer of the State Emergency Management Office stated, “We plan on getting out of harm’s way before potassium iodide would do any good. Potassium Iodide to a lot of folks is a cure-all. It’s a theoretical solution, not a workable one.” Emphasis Added.

¹⁸⁸ Testimony of Anthony Sutton, Hearing Transcript at 74.

¹⁹⁰ ETTE at 2-6.

¹⁹¹ ETTE at 2-6.

9. Evacuation Plan Untested.

*There has been no actual testing of the evacuation plan.*¹⁹³

County officials argue that the Plan is regularly tested. "We test the plans and procedures regularly short of actually putting people on the streets and in harms way but we test the plan every other year under federal scrutiny. In off years the state conducts its own test."¹⁹⁴

While there are annual drills during which time the County Executives appear at the evacuation control center, run through tabletop and communications drills, and test communications equipment, there has never been an actual test of the Plan. The potential for disruption and damage in an actual test of the Plan, and the lack of public support for the danger and inconvenience that a test would incur, cannot be discounted. It may be that those dangers outweigh any benefit. If the decision not to test the Plan is maintained, officials should stop saying that the Plan itself has been tested.

VI. ADDITIONAL INVESTIGATION TOPICS.

A. The Economic Costs to the County, State and Local governments.

The requirement for an adequate evacuation plan is found in Federal law, as a requirement placed on the licensee, in this case a for-profit corporation. Yet almost the entire cost of preparing the Plan, ensuring the adequacy of physical and human resources has been borne by taxpayers. The decision to socialize a cost of doing business has been a hallmark of nuclear facilities, such as the decision that taxpayers should bear the expense of disposing of nuclear waste. The Executive Law of New York provides for limited compensation to counties that have nuclear generating facilities in the form of a payment from the licensee of the facility.

¹⁹² Memo to file December 19, 2001.

¹⁹³ Testimony of Andrew Feeney, Hearing Transcript at 30, 31.

¹⁹⁴ Testimony of Andrew Feeney, Hearing Transcript at 31.

That payment is limited by law at a grossly inadequate amount. The actual cost of evacuation planning and preparation should be borne by the licensee and the law should be changed accordingly.

B. The Health Impacts of Various Radiation Release Scenarios from Indian Point.

The measurement of the number of lives lost, injuries and illnesses incurred, and economic damage that would ensue from a major radiation release is one of the most important and most controversial of issues that must be debated with respect to the Plan and the continued operation of Indian Point. Both government and licensees have been reluctant to publicly discuss these calculations, largely because of fear of their impact on public opinion. But such studies have been done, and are available as part of the debate. The most prominent study was completed in 1982 by the Sandia Labs of New Mexico in a report entitled, "Consequences of Reactor Accident (CRAC-2)", which was in turn analyzed by the United States House of Representative's House Subcommittee on Oversight and Investigation. Using the study and "CRAC2 computer Printouts," the Subcommittee set forth a worst case scenario is sometimes quoted in the debate.¹⁹⁵ It is an "unbounded" scenario presuming a complete release of all radioactive elements at Indian Point with no protective or mitigation measures taking place. In other words, it is significantly more serious than is likely to happen, even in a terrible and major release. The protective measures that are or could be in place will clearly reduce those numbers dramatically. But it is useful as a benchmark. The protective measures that are or could be in place will clearly reduce those numbers dramatically. But even if we assume fifty or seventy five or ninety per cent reductions, the Sandia study predicts thousands of deaths and billions of dollars of damages. These numbers cannot be swept under the rug. Until a better analysis is done the Sandia study should be taken seriously. The worse case meltdown scenario is based upon 1982 population data and 1982 dollars and the identified effects are limited to the first year.

¹⁹⁵ Calculations of Reactor Accident Consequences ("CRAC2") for United States Nuclear Power Plants (Health Effects and Costs) Conditional On a SST1 Release. Committee on Interior and Insular Affairs, Sub-Committee on Oversight and Investigations, November 1, 1982. Entergy Officials

Table 3: 1982 numbers

Reactor	Peak Early Fatalities	Peak Early Injuries	Peak Cancer Deaths	Property Damage (in Billions \$ -1982)
Indian Point 2	46,000	141,000	13,000	\$274 billion
Indian Point 3	50,000	167,000	14,000	\$314 billion

The 1982 estimates of billions of dollars of property losses would be dramatically higher in 2002 dollars.

VII. FINDINGS.

For the reasons set forth in this Interim Report, the Plan is inadequate to protect the public health and safety. The Plan's inadequacies are not marginal; the Plan is not close to being able to do its job, or to meet the legal requirements for approval. Some of the inadequacies identified can be remedied without enormous difficulty; some of those corrections are underway. Some of the inadequacies are fundamental and raise a legitimate question as to whether or not the population densities and road configurations make it possible to evacuate the EPZ without enormous loss of life and property. The attempt to improve the Plan should continue, because even a bad Plan will probably lessen the suffering and damage that could come with a substantial release of radiation. The continued insistence by the County Executives, the Governor and the Federal Government that the Plan will protect our communities is an inaccurate assessment of the Plan. The Governor and the County Executives should withdraw their Letters of Certification. The confusing and contradictory explanation of the Federal regulatory requirements that now appear in PR-1 should be immediately clarified. The substantial questions not yet addressed in this Report require further investigation.

This Interim Report was produced by the Office of Assemblyman Richard Brodsky. John Parker, Chris Lee, and Jim Malatras made major contributions to the Report.

strenuously disagree with the numbers in the report and argue that the study itself shows dramatically fewer deaths, injuries and economic data. This dispute must be resolved.

SCHEDULE OF THE HEARINGS

This schedule was put forth in an April 23, 1982 Memorandum and Order of the Indian Point Atomic Safety and Licensing Board. NRC questions to be addressed in the hearings are reprinted below

April 15	Informal discovery begins
April 26	Formal discovery begins
May 3	All interrogatories on matters under Commission Questions 3 and 4 filed
May 31	Discovery closes on matters under Questions 3 and 4
June 7	Testimony on matters under Questions 3 and 4 filed
June 14	Cross-examination plans for Questions 3 and 4 filed
June 17-18	Prehearing Conference
June 22-25	Evidentiary hearing
July 2	Testimony on Commission Question 6 filed
July 6-9	Evidentiary hearing
July 12	Cross-examination plans on Question 6 filed
July 16	Testimony on Commission Questions 1, 2, and 5 filed
July 19-23	Evidentiary hearing
July 26	Cross-examination plans on Questions 1, 2, and 5 filed
July 26-August 6	Evidentiary hearing

NRC QUESTIONS:

1) What risk may be posed by serious accidents at Indian Point 2 and 3, including accidents not considered in the plants' design basis, pending and after any improvements described in 2) and 4) below?

2) What improvements in the level of safety will result from measures required or referenced in the Director's Order to the licensee, dated February 11, 1980?

3) What is the current status and degree of conformance with NRC/FEMA guidelines of state and local emergency planning within a 10-mile radius of the site and, of the extent that it is relevant to risks posed by the two plants, beyond a 10-mile radius?

4) What improvements in the level of emergency planning can be expected in the near future, and on what time schedule, and are there other specific offsite emergency procedures that are feasible and should be taken to protect the public?

5) Based on the foregoing, how do the risks posed by Indian Point Units 2 and 3 compare with the range of risks posed by other nuclear power plants licensed to operate by the Commission?

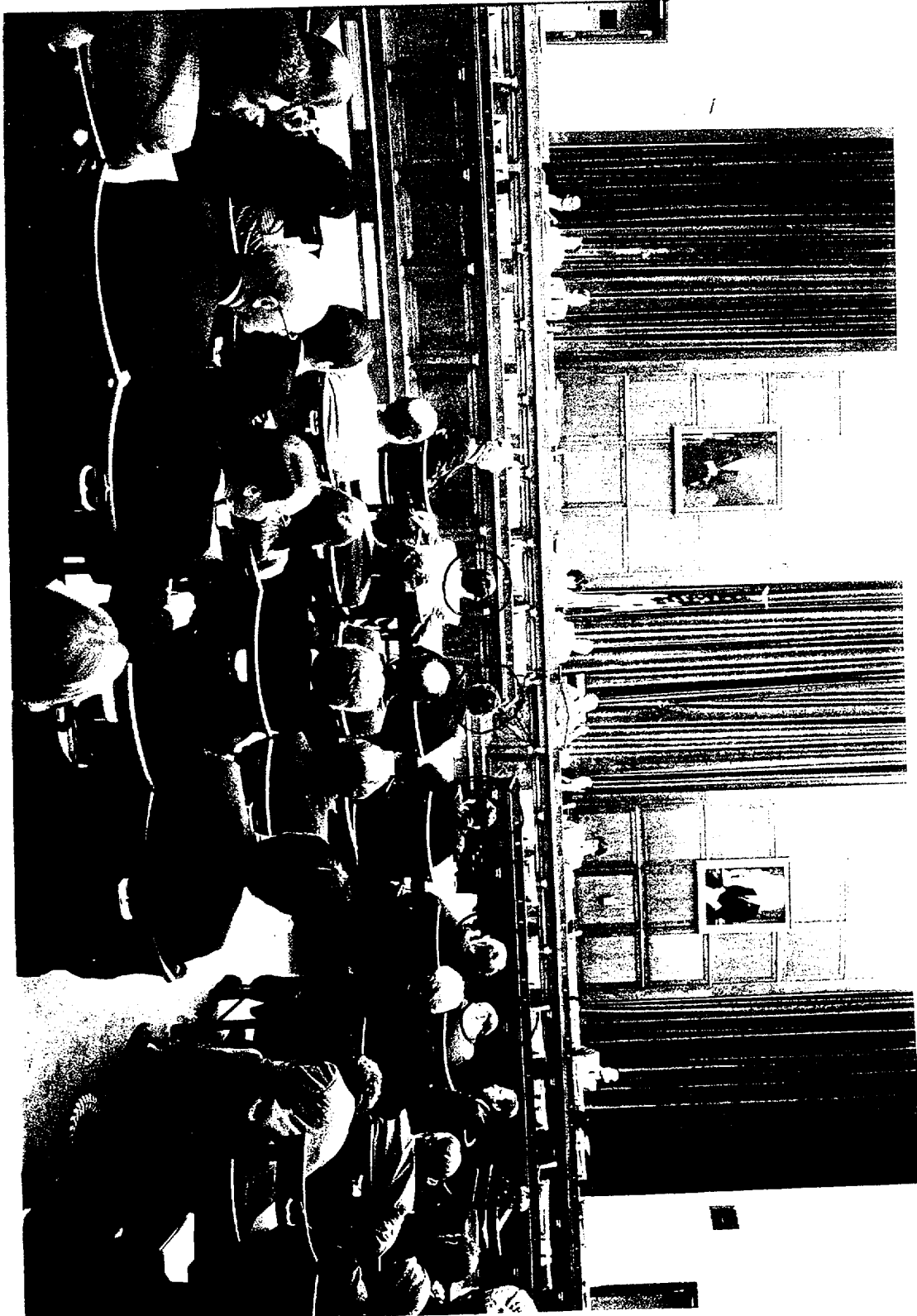
6) What would be the energy, environmental, economic, or other consequences of a shutdown of Indian Point Unit 2 and/or Unit 3?

7) Does the Governor of the State of New York wish to express an official position with regard to the long-term operation of the units?

Attachment D.

Photo: l-r Congressmen Peter Peyser, Richard Ottinger, Benjamin Gilman and Hamilton Fish (and center testifying NRC Commissioners l-r) James K. Asselstine, Victor Gilinsky both voted against okaying Emergency Evacuation Plan, Chairman Nunzio J. Palladino, John Ahearne, and Thomas M. Roberts who approved it (3-2 decision).

Schedule of the Hearings, the Contentions.



James K. Asselstine

Attachment E.

Photo l-r: Congressman Ottinger talks to Judge Louis J. Carter, Chief Judge of ASLB whose letter of resignation on Sept 2nd 1982 follows:

Gentlemen: It is with great regret that I tender my resignation, effective immediately, as an Administrative Judge of the Atomic Safety & Licensing Board.

Certain aspects of orders in other proceedings, such as the Zimmer case, have played a substantial part in my decision, but it is primarily because of Indian Point that I am leaving.

It is not necessary, at this time, to review in detail my disagreement with all the changes which have come about in the Indian Point proceeding. It appears to me, however, that the goal of a truly independent Licensing Board has been needlessly subordinated to the Commission's other goals in the Indian Point case.... Thus to sit as the Chairman of the Board under the new restrictions and rulings would be incompatible with my sense of fairness.

Unfortunately, this case has indicated to me that we do not share a common concern for the processes which regulate the resolution of these matters or in making the NRC's legal process a finer craft so that the quality of its hearings may be improved and public participation increased. Sincerely, LOUIS J. CARTER, Administrative Judge"

(next)--l-r: Elsie Sekelsky, School Nurse at Carrie E. Tompkins Elementary School and Barbara Gochman C.E.T. teacher. "Elsie Sekelsky testified that the 'send home scenario' is not an improvement to the plan. As school nurse she routinely attempts to contact parents or emergency numbers for sick children. Finding someone to take responsibility for one child can take a very long time."



Elsie Sevelsky, Sweet Nurse at CBT + Berman (?) Goldman / CBT teacher
we saw in. (See alternate photo for details.)



Sharon from Hand

MOTION FOR RECONSIDERATION
TO REOPEN HEARINGS
INDIAN POINT

4-29-02