

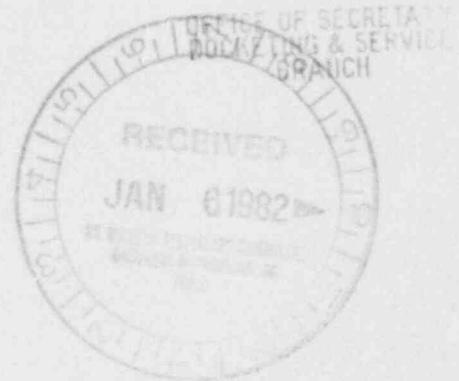
UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

DOCKETED  
USNRC

ATOMIC SAFETY AND LICENSING BOARD

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Before Administrative Judges:  
Louis J. Carter, Chairman  
Frederick J. Shon  
Dr. Oscar H. Paris



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In the Matter of )

CONSOLIDATED EDISON COMPANY OF )  
NEW YORK, INC. (Indian Point, )  
Unit No. 2) )

Docket Nos. 50-247-SP  
50-286-SP

POWER AUTHORITY OF THE STATE OF NEW )  
YORK, (Indian Point, Unit No. 3) )  
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December 31, 1981

CON EDISON'S MEMORANDUM RESPECTING CONTENTIONS  
PROPOSED BY PROSPECTIVE INTERVENORS  
-----

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CON EDISON'S MEMORANDUM RESPECTING  
CONTENTIONS PROPOSED BY  
PROSPECTIVE INTERVENORS  
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Consolidated Edison Company of New York, Inc.  
("Con Edison"), licensee of Indian Point Unit 2, pursuant  
to leave granted by the Licensing Board at the December 2,  
1981 pre-hearing conference, responds to the contentions  
filed by prospective intervenors in this proceeding. Con  
Edison has been served with contentions proposed by Friends  
of the Earth, Inc. and New York City Audubon Society, Greater  
New York Council on Energy, Parents Concerned About Indian  
Point, West Branch Conservation Association, Rockland Citizens

for Safe Energy, Westchester People's Action Coalition, Inc., Union of Concerned Scientists and New York Public Interest Research Group, Inc., and Richard L. Brodsky.

Con Edison responds to each of the separate contentions and bases for contentions raised by the various prospective intervenors at Point VI below. However, since it is apparent that a great number of the proposed contentions were not prepared in accordance with the requirements of the Commission's orders establishing this proceeding, the licensee initially states some general concepts which it is submitted should guide the Board and the parties in formulating issues and charting the course of this proceeding.

I

THE COMMISSION INTENDS THAT ONLY  
CONTENTIONS WHICH ARE SITE-SPECIFIC  
TO INDIAN POINT BE ADMITTED IN THIS  
-----  
PROCEEDING

It is clear from the Commission's orders establishing this proceeding that a strictly site-specific adjudication is intended. In the Commission's May 30, 1980 Order directing that a Licensing Board proceeding be conducted, the Commission described the proceeding as:

"an adjudication before an Atomic Safety and Licensing Board . . . on safety issues related specifically to Indian Point Units 2 and 3."  
May 30, 1980 Order at 2 (emphasis supplied).

The Commission fully recognized that certain generic issues had been raised by the original petition of the Union

of Concerned Scientists, such as the adequacy of emergency planning and safety features at plants located in allegedly high population density areas. Nonetheless, the Commission carefully confined the scope of this proceeding to "safety issues related specifically to Indian Point," and directed that generic issues be taken up in a separate "generic proceeding" which the Commission ordered simultaneously with this plant-specific adjudicatory proceeding. See May 30, 1980 Order at 5. Later, in its Order of January 8, 1981, the Commission stated its "plan to address the generic question of the operation of nuclear reactors in areas of high population density through a generic proceeding, to be decided at a later date," January 8 Order at 2.

However, as can be seen at Point VI below, many of the contentions which have been proposed by prospective intervenors are not "related specifically to Indian Point Units 2 and 3," but rather raise issues which could equally be raised with respect to numerous other plants as well. Such contentions are clearly not what the Commission intended and should not be accepted by the Board.

The Commission expressed its predominant focus for this proceeding in its January 8, 1981 Order when it stated that:

"The Commission's primary concern is the extent to which the population around Indian Point affects the risk posed by Indian Point as compared to the spectrum of risks posed by other nuclear plants. The Commission is concerned with both the total

risk to persons and property posed by the Indian Point plants and the risk to individuals living in the vicinity of the Indian Point site, including that resulting from the difficulty of evacuation in an emergency. The Commission intends to compare Indian Point to the spectrum of risks from other nuclear power plants, since the primary basis for the Commission's decision will be how extreme are the individual and societal risks associated with Indian Point compared to the spectrum of risks from other operating stations." January 8 Order at 7-8.

The essence of the Commission's concern, then, is how is Indian Point different from other plants in areas important to risk? Many of the proposed contentions do not address this question, but instead purport to raise issues about nuclear power plant accident consequences generally. Such generic issues include the effects of radiation upon individuals, the psychological effects of nuclear power plants upon children, and the feasibility of emergency planning drills as a test of emergency response capability -- none of which aid the Commission in determining how Indian Point is different.

Only contentions which are site and plant-specific to the Indian Point units can comply with the Commission's directives and help answer how the risks posed by these plants "compare to the spectrum of risks posed by other plants." It is only such Indian Point-specific contentions which may be admitted in this proceeding consistent with the Commission's express requirements.

II

CONTENTIONS RELYING UPON POSTULATED  
ACCIDENT SCENARIOS OR THE PRESUMED  
CONSEQUENCES OF SUCH SCENARIOS HAVE  
BEEN CAREFULLY CIRCUMSCRIBED BY THE  
COMMISSION'S IMPOSITION OF EXPLICIT  
PRECONDITIONS  
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In its discussions leading up to the September 18, 1981 Order, the Commission realized that the hearings could degenerate into an interminable dialogue on radiological accident "what ifs" unless it took careful measures to establish prerequisites to the raising of accident or accident consequence issues. Question Number 1 of the Commission's September 18 Order provides that:

"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? Although not requiring the preparation of an Environmental Impact Statement, the Commission intends that the review with respect to this question be conducted consistent with the guidance provided the staff in the Statement of Interim Policy on "Nuclear Power Plant Accident Considerations under the National Environmental Policy Act of 1969;" 44 FR 40101 (June 13, 1980).5/

5/ In particular, that policy statement indicates that:

Attention shall be given both to the probability of occurrences of releases and to the environmental consequences of such releases;

The reviews 'shall include a reasoned consideration of the environmental risks (impacts) attributable to accidents at the particular facility or facilities . . . .';

'Approximately equal attention should be given to the probability of occurrence of releases and to the probability of occurrence of the environmental consequences . . . .'; and

Such studies 'will take into account significant site and plant-specific features . . . .'

Thus, a description of a release scenario must include a discussion of the probability of such a release for the specific Indian Point plants." September 18 Order at pp. 3-4 (emphasis supplied).

In disregard of the requirement imposed by footnote 5 of the Commission order, a great number of contentions proposed in this proceeding presume that serious radiological accidents with off-site consequences have occurred, and skip immediately to the "environmental consequences." Consistently ignored is the Commission's explicit requirement that contentions purporting to rely upon the consequences of accidents give "approximately equal attention to the probability of occurrence," and that such contentions must discuss postulated accidents on a plant-specific basis "for the specific Indian Point plants."

The contentions offered here frequently presume exposures to radioactive releases without even postulating the accident which would lead to such an exposure, and none of the "radiation effects" contentions build upon scenarios which either (i) discuss probability of occurrence, or (ii) model the assumed accident "for the specific Indian Point plants."

Since the predominant concern of the Commission prompting this proceeding is how Indian Point accident risks

differ from those at other reactor sites, the entire purpose for the hearings is frustrated if "radiation effects" contentions presumed to ensue from an accident are not presented as the Commission directed in footnote 5 of its order. Inefficiency in effectuating emergency response which, it is asserted, would lead to radiation exposures in the event of an accident takes on a much different character in the Commission's eyes if the claimed probability is 1 in 10,000 reactor years than if it is 1 in 1,000,000,000. As the Commission noted in its January 8 Order (at 8), "Risks from nuclear power reactors are defined by the probabilities and consequences associated with potential accidents."

The Commission has carefully required in footnote 5 that prospective intervenors present both halves of the risk equation in proposing "radiation effects" contentions, yet the intervenors have studiously avoided doing so. In order that the record of this proceeding be responsive to the Commission's "primary concern" as to risk issues (defined by the Commission as probability and consequences), it is imperative that all radiation effects contentions be required to fully comply with the Commission's risk prerequisites set forth in footnote 5 of its September 18 Order, and that non-complying contentions not be admitted.

III

THE LICENSING BOARD HAS BEEN EMPOWERED  
TO ADMIT CONTENTIONS CHALLENGING NRC  
REGULATIONS ONLY UNDER THE NARROW  
CIRCUMSTANCES SET FORTH BY THE COMMISSION

In promulgating its Orders relating to this proceeding, the Commission of course recognized that under 10 CFR § 2.758 it has withheld jurisdiction from Licensing Boards to entertain attacks on the validity of Commission Regulations except in special circumstances not present here. Potomac Electric Power Co. (Douglas Point Nuclear Generating Station, Units 1 & 2), ALAB-218, 8 AEC 79, 88-89 (1974). While not wishing to disturb this general rule,\* the Commission nonetheless did want to permit some leeway to intervenors to suggest specific additional safety measures, if there was some indication that the measures proposed would reduce "real world" accident risk for the Indian Point plants below the levels achieved by the February 11, 1980 Order of Harold Denton, Director of the Office of Nuclear Reactor Regulation.

Since suggesting a new safety feature for Indian Point would necessarily result in a claim that current licensing requirements should be improved upon, some exemption

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\* The Commission did raise the materiality threshold for most contentions in this proceeding, directing that contentions brought within its seven enumerated questions not only be material and relevant, but that they also appear "likely to be important" in answering the Commission's questions, see September 18 Order at 2, and Point IV, infra.

from the prohibition against attacking the validity of Commission regulations was necessary to achieve the Commission's aim. But the Commission also realized that the list of possible safety features which might be proposed -- such as triple or quadruple containments -- is virtually endless and could prolong the proceeding indefinitely.

The Commission's response was to establish a carefully balanced test for the admission of contentions which challenged existing Commission regulations by suggesting more rigorous or additional safety measures. Before such contentions may be admitted, their proponents must convince the Licensing Board: (a) that admission of the contention is "likely to be important" to resolving whether Indian Point poses a "significant risk to public health and safety, notwithstanding the Director's measures," without the benefit of the safety measure being proposed; and (b) that the measures being proposed would bring about a "significant reduction" in the risk of the Indian Point units.\*

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\* The Commission stated the standards for contentions challenging existing NRC regulations in Question 2 of its September 18 Order (at 4), as follows:

"A contention by a party that one or more specific safety measures, in addition to those identified or referenced by the Director, should be required as a condition of operation would be within the scope of this inquiry if, according to the Licensing Board, admission of the contention seems likely to be important to resolving whether (a) there exists a significant risk to public health and safety, notwithstanding the Director's measures, and (b) the additional proposed measures would result in a significant reduction in that risk."

Thus under the Commission's test, an intervenor proposing a further containment building for the Indian Point units -- or a filtered, vented containment system or the expansion of the plume EPZ -- must initially convince the Licensing Board that the intervenor's ability to advance the safety feature being proposed in the hearings is likely to be important to determining whether Indian Point poses a significant risk to public health and safety. Secondly, an intervenor must then persuade the Board that the feature he or she is proposing would significantly reduce the risk at Indian Point.

However, the contentions actually submitted to the Board have ignored the Commission's test. Both plant hardware and off-site changes of major scope have been proposed without any attempt to comply with the Commission's September 18 Order. The Commission's requirements not having been met, all contentions challenging NRC regulations should be rejected.

#### IV

THE LICENSING BOARD SHOULD EXERCISE  
THE SPECIAL POWERS GRANTED TO IT IN  
THIS PROCEEDING TO REQUIRE A HIGHER  
LEVEL OF IMPORTANCE AND PARTICULARITY  
FOR ADMITTED CONTENTIONS  
-----

The Commission fully realized in drafting its January 8 and September 18 Orders that all subjects falling within the reach of its seven enumerated questions could not

possibly be examined prior to the September 1982 completion date. However, the Commission viewed the completion date as highly important because it must first receive the Board's record and recommendations "in order that the Commission may make its decision within a reasonable period of time" (January 8 Order at 7).

The Commission's answer to this dilemma was to permit the Licensing Board to employ higher standards for admissible contentions than would normally be applied in licensing proceedings. Whereas the ordinary standards for admissible contentions relate to relevance and materiality, in this proceeding the Board has been:

"empowered only to accept and formulate, after consultation with the parties, those contentions which seem likely to be important to resolving the Commission's questions. . . ." September 18 Order at 2.

Thus the Licensing Board need not admit contentions which would be admissible in ordinary licensing proceedings -- and indeed cannot do so if it is to complete its work by September 1982 and respond with particularity to the matters of "primary concern" to the Commission.

Notwithstanding the Commission's desire for a higher threshold of acceptability in this proceeding, many of the contentions which have been proposed do not even meet ordinary licensing proceeding standards. 10 CFR § 2.714 requires that there be some factual basis set forth for the proposed contentions, and that the contentions themselves be set forth "with

particularity." 10 CFR § 2.714(a)(3) citing § 2.714(a)(2). The Commission has interpreted the "particularity" requirement to mean that "vague generalized assertions, drawn without any particularized reference to the details of the challenged facility . . . are not appropriate for the adjudicatory process." Philadelphia Electric Company, et al. (Peach Bottom Atomic Power Station, Units 2 and 3), CLI-73-10, 6 AEC 173, 174 (1973). Indeed, without a rigorous application of the particularity requirement, the licensees, who have a right to submit evidence disproving the contentions, will not be fully aware of the facts in controversy. As stated by the Appeal Board in Kansas Gas & Electric Co. (Wolf Creek Generating Station), ALAB-279, 1 NRC 559, 574 (1975):

"The purpose of the regulation is to establish that there is an "issue" to be presented [by the intervenor] and determined (by a licensing board) in the proceeding." (citing Northern States Power Company (Prairie Island, Units 1 and 2), ALAB-107, 6 AEC 188, 192, affirmed, CLI-73-12 6 AEC 201 (1973), affirmed sub. nom. BPI v. AEC, 502 F.2d 424 (D.C. Cir. 1974).)

In this proceeding we have been treated to contentions which claim that the Indian Point emergency plans "do not meet any of the sixteen mandatory standards of 10 CFR 50.47(b)," contentions which challenge the "NRC's attitude," and the like. Such contentions do not meet the particularity requirements of ordinary licensing proceedings, and more importantly, because of their lack of focus, do not "seem likely to be important" to answering the Commission's enumerated questions.

Still other contentions merely recite regulatory language and claim that the Indian Point units do not comply, or rely upon material incorporated by reference. Such contentions have been found inadmissible. Kansas Gas & Electric Co., supra, 1 NRC at 575-76; Tennessee Valley Authority (Browns Ferry Nuclear Plant, Units 1 and 2), LBP-76-10, 3 NRC 209, 216 (1976).

Many proffered contentions thus do not meet ordinary particularity requirements, omit underlying factual bases, and are not "likely to be important" in resolving the Commission's questions. The Board should exercise its broad powers under the Commission's January 8 and September 18 Orders and decline to accept contentions which appear unimportant to the risk of the Indian Point units, including contentions which might normally be admissible. In Point V below, a basis for categorizing admitted contentions is proposed.

V

IN ORDER TO COMPLETE THE PROCEEDING  
WITHIN THE TIME PERIOD SPECIFIED BY  
THE COMMISSION, AS A CASE MANAGEMENT  
DEVICE THE LICENSING BOARD SHOULD  
CREATE TWO CATEGORIES OF CONTENTIONS

The Commission clearly identified as its "primary concern" in this proceeding "the extent to which the population around Indian Point affects the risk posed by Indian Point as compared to the spectrum of risks posed by other nuclear plants." September 8 Order at 7-8. However, it is evident that a great

number of the contentions which have been proposed bear at best a tenuous relationship to the risk issue which is of "primary" importance.

Because the Board and parties will be hard pressed to complete this proceeding within the time period set forth by the Commission, we propose that the Board create separate "primary" and "secondary" categories of admitted contentions. As envisioned, the distinction between each category would be based upon the Board's perceptions of the degree of relevance which each contention has to the primary question of Indian Point risk. Contentions which appear to be highly relevant to plant risk would be categorized as primary, while contentions offering less promise of importance to plant risk would become secondary. In terms of priorities for discovery, submission of testimony, and cross-examination during actual hearings, contentions in the primary category would be exhausted before secondary contentions would be taken up, and secondary contentions would be considered on a "time available" basis consistent with the Commission's timetable for completion of the proceeding.

In the area of emergency planning, where most (but not all) of the contentions are found, only a few contentions would fit in the category of "primary contentions" since only a few emergency planning issues have a high relevance to plant risk. Specifically, only contentions relating to evacuation time estimates and the efficacy of sheltering are of great importance to risk, since these factors must be included in the

modeling of the consequences of postulated accidents.\* However, whether high schools outside the plume EPZ will be open, or whether emergency planning pamphlets are written in several languages, are issues of relevance to the risk of Indian Point only if they can be shown to materially affect evacuation time estimates or sheltering factors. Contentions in the emergency planning area which are not directly related to evacuation time estimates or sheltering cannot bear significantly upon Indian Point plant risk assessment, and thus should receive secondary category status.

The Commission has acknowledged that it is "fully aware of the uncertainties that attend quantitative risk assessment calculations" (January 8 Order at 8), but concluded nonetheless that "[d]espite these uncertainties, risk assessment methods offer the best means available for objective and quantitative comparison of the kind needed here." (Id.) Such risk quantifications have been expressly identified as the Commission's "primary concern" in this proceeding, and the Board should structure its treatment of the proposed contentions to

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\* Indeed, the Commission itself appeared to acknowledge this when it stated in its emergency planning question, Question 3 (January 8 Order at 10) that:

"An effort should be made to establish what the minimum number of hours warning for an effective evacuation of a 10-mile quadrant at Indian Point would be. The FEMA position should be taken as a rebuttable presumption for this estimate."

adequately explore Indian Point plant risk in the first instance, prior to the consideration of contentions in other areas. Such a treatment of hearing issues would also have the salutary benefit of putting the risk significance of emergency planning and other similar topics in proper perspective by the time they are taken up in detail in the hearings.

VI

CON EDISON'S POSITION ON THE APPROPRIATENESS  
OF THE CONTENTIONS OF EACH PROSPECTIVE INTERVENOR

Set forth below is a contention-by-contention, basis-by-basis evaluation of the appropriateness of the contentions and bases for contentions offered by each of the prospective intervenors in this proceeding.

Contentions of the Friends of the Earth  
and New York City Audubon Society

Contention I:

The consequences of an accident at the Indian Point reactors can include substantial and irreparable harm to the health and safety of the public in the New York City area, and in other areas which are in the vicinity of the reactors. Immediate radiological threats to the health of the public in the event of a serious radiological emergency will include prompt and early fatalities, illnesses, latent fatal or non-fatal cancers, thyroid nodules, or genetic defects. Long-term health threats can be posed by contaminated soils, buildings, food and water supplies in addition to the long-term health threats posed by releases of radiation during accident conditions. Present emergency planning is inadequate to mitigate these health effects, and there are no interim or future protective measures which could feasibly protect the health of the public.

Bases for Contention I:

-- Accident scenarios which must be considered in determining doses to the public at risk must include those accidents which are beyond the design basis of the reactors, in accordance with the Commission's Order of January 8, 1981.

-- Within two weeks of the releases of radiation from an accident, some 10% of the expelled radioactive matter may be spread by winds and waters far beyond the original area of contamination to endanger other regions and their inhabitants. Many radioactive particles remain in a transportable state to pose a threat to the health of people and wildlife, in addition to the threats posed by contamination from the reactor

releases directly.

-- New York City receives its potable water supply from reservoirs in the immediate area of the Indian Point reactors.

-- The medical and hospital facilities in the area, and the entire nation are inadequate to care for the numbers of potentially contaminated or irradiated victims, which may be hundreds of thousands of persons because of the sheer density of the population. Some 17 million people live within fifty miles of Indian Point.

-- Particularly vulnerable persons who are at risk during nuclear emergencies include young children, the aged, persons who are especially susceptible to radiation, the handicapped, and persons who are less able to take shelter or other protective actions or to obtain sufficient medical diagnosis or treatment due to financial constraints.

-- Radioactive particles released from serious accidents include isotopes such as cesium and strontium which have long half-lives and which will remain in the environment for decades and enter the food chain and water supply.

-- There are no emergency plans for the New York City area to protect the public at risk from plume exposure and inhalation exposure, either from releases during an accident or from re-deposition of radioactivity after initial releases.

-- The topology of the Hudson River Valley is such that under some common meteorological conditions, especially rain, very hazardous amounts of radiation can be deposited on New York City from serious accidents.

#### Con Edison's Response to Contention I:

This contention is not site-specific, but instead asserts general consequences claimed to occur from any nuclear power plant accident. Since the contention is not site-specific, it does not fit within the Commission's questions. To the extent that the contention postulates the consequences of a serious accident, even an accident at Indian Point, it does not conform to the requirements of footnote 5 of the Com-

mission's September 18 order, requiring with respect to postulated accidents that equal attention be given to probability of occurrence and probability of consequences, and also that such accidents be postulated on the basis of "the probability of such a release for the specific Indian Point plants."

There are elements of the "Bases for Contention I" which might be fashioned into acceptable contentions. The effects of an accident on the New York City water supply, if characterized to meet the requirements of footnote 5, may be acceptable. The basis relating to the topology of the Hudson River Valley may form the basis for an acceptable contention.

The remaining bases for Contention I are not acceptable under the Commission's orders. The bases relating to the spread of a nuclear plume or the composition of the isotopes released are not site-specific. The basis relating to adequate medical facilities presumes an accident, but does not meet the requirements of footnote 5. The basis relating to "special problem" citizens (young children, aged, etc.) is not site-specific, there being no claim that persons in such category at Indian Point vary from any other site. The bases relying upon hazards to persons in New York City are not acceptable, being an attack upon the Commission's regulations requiring comprehensive emergency planning only within a ten-mile radius from a nuclear plant.

Contention II:

The consequences of an accident at Indian Point can include substantial and irreparable harm to the environment,

to wildlife, aquatic life in the Hudson and other waterways, to agricultural lands, private property, and public recreational lands. The areas that are directly contaminated during an accident and many surrounding areas may have to be abandoned for decades or even centuries in the event of a serious accident at the Indian Point reactors. Consideration must be given to these societal and individual consequences of an accident (which are completely avoided by shutting down the reactor) in considering the environmental consequences of shutdown, as Ordered by the Commission at Question 6.

Bases for Contention II:

-- New York City, New York State, and the United States maintain thousands of acres of land for recreational and conservation purposes within a 50-mile radius of Indian Point. These areas would be rendered unusable for the gamut of recreational and educational purposes which are associated with such facilities for decades after contamination by radiation releases from an accident at Indian Point.

-- There are extensive agricultural lands -- producers of dairy products, meats, and fruits and vegetables -- in the fifty-mile radius of the Indian Point reactors. These lands would be rendered unusable for decades if contaminated by cesium and strontium or other long-lived isotopes which enter the food chain through contaminated soils.

-- The loss of use of these agricultural or recreational lands would be an individual and societal consequence which cannot be mitigated through any feasible (present or future) means or through any emergency protective actions.

-- Contamination of the lands and waterways in the Indian Point area would result in long-term threats to the health of people and domestic animals or wildlife if the areas are not abandoned.

Con Edison's Response to Contention II:

As with Contention I, this contention is not site-specific. The waterways, agricultural lands, private property and recreational lands which it is claimed would be affected by a serious accident are the same types of properties which would be affected by an accident at any site. The contention postulates certain unspecified radiological accidents, but

does not do so in accordance with the requirements of footnote 5 of the September 13 order. The consequences of an accident do not fit within Question 6, as claimed, that question being confined to the costs of shutdown, not to continued operation with the assumption of accidents. Contention II is accordingly inappropriate.

None of the bases for Contention II meet the requirements of the Commission orders. References to property damage which would be interdicted by a postulated accident are not set forth in such a manner that they meet the requirements of footnote 5 of the September 18 order.

Contentions of the Greater New York Council  
on Energy  
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Contention I:

Viable alternative strategies exist to incurring the excess fuel costs associated with early and permanent shutdown of Indian Point Units 2 and 3. Therefore, the NRC would not be justified in permitting the continued operation of the units solely on the grounds of supposed economic or energy need, especially in the face of threats to the health of the public posed by accident consequences. The failure of State agencies or the utilities to implement such strategies cannot be held to imply that such strategies are not viable, would not save or produce sufficient energy, or that such strategies would not limit or eliminate excess fuel costs.

Basis for Contention I:

Such viable alternative strategies would include electrical conservation through rate reform or financial incentives; institutional conservation strategies such as electrical conservation in large buildings or in mass transit systems; cogeneration; increased use of hydroelectric generation and increased importation of hydroelectric generation; coal conversion; use of natural gas; and the use of wind and solar electric generation.

Con Edison's Response to Contention I:

The first and last sentences of this contention might form the basis for an acceptable contention, if set forth with the requisite specificity to put the parties on notice as to the particular matters being asserted, and if factual bases for the assertions were given. However, the second sentence of the contention is not an appropriate contention because it purports to address the economic aspects of risk issues without meeting the requirements of footnote 5 of the Commission's September 18 order.

Contention II:

The economic costs of an accident at the Indian Point reactors which involves the releases of radiation -- or solely the threat of releases -- and the implementation of protective actions spontaneously or as advised by authorities far outweigh the costs of the energy and economic impacts of permanent shutdown and decommissioning the reactors.

Bases for Contention II:

The continued operation of the Indian Point Units is not a no-cost option; comparison on a net basis of the costs of immediate shutdown versus delayed shutdown must be considered in assessing the economic risks associated with continued operation of Indian Point.

The expenses attributable to a significant release of radiation off-site would include costs of immediate and long-term health care, costs of implementing protective actions (including costs to private and public entities), costs of private and public property damage or the loss of use of private and public property for many years, the costs of pain and suffering, and business and employment losses which would have secondary effects throughout the United States and the world.

In addition would be the considerable cultural costs resultant from the possible loss of the uniquely valuable educational, commercial, technological, and cultural resources of the New York City greater metropolitan area.

The costs of accidents for which protective actions are taken but which do not involve releases of radiation

would include the costs of the implementation of the protective actions (including costs to private and public entities), costs of pain and suffering, costs of the temporary loss of use of private and public property, the costs of business and employment losses, and the costs from business and employment disruption.

The costs of immediate shutdown would include the loss of the use of the reactors as generation sources for a number of years, and attendant loss of revenue from capital investments. Decommissioning of the reactors would occur later at any rate. The additional costs (or savings) due to the early decommissioning would be small compared with the costs of an accident as cited above.

Secondary beneficial economic effects would accrue from the increased employment and advantages of decentralized energy sources from the use of alternative energy strategies to replace the energy generated by the Indian Point units.

#### Con Edison's Response to Contention II:

This contention does not address Question 6 of the Commission's January 8 order because it relates to the costs of a postulated serious accident rather than the costs of shutting down the Indian Point units. The reference to serious accidents in Contention II does not meet the requirements of footnote 5 of the Commission's September 18 order and should not be allowed.

The basis for Contention II is principally concerned with the off-site consequences of a postulated serious accident, including health, property damage and cultural consequences. These are "Question 1" issues relating to the risk of the units; however, they are not presented in accordance with the requirements of footnote 5 and thus cannot form the basis for an acceptable contention. The following sentences from the basis for Contention II might form the basis for an acceptable contention if confined to the Commission's Question 6:

"The costs of immediate shutdown would include the loss of use of the reactors as generation sources for a number of years, and attendant loss of revenue from capital investments . . . . Secondary beneficial economic effects would accrue from the increased employment and advantages of decentralized energy sources from the use of alternative energy strategies to replace the energy generated by the Indian Point units."

### Contentions of Parents Concerned About Indian Point

#### Contention I:

Children within the ten-mile plume exposure pathway Emergency Planning Zone are particularly susceptible to the physical effects of radiation and to the psychological trauma of a disaster, and are not adequately protected by the Radiological Emergency Response Plan.

#### Bases for Contention I:

1) The radiation dose absorption rate for children is significantly higher than for adults, but correspondingly heightened protective measures have not been designed for them.

2) Families residing within the ten-mile EPZ have been given no information or instructional brochures. To be effective, emergency planning information must be widely disseminated, extremely detailed, and available in several languages.

3) There is no financial commitment on the part of local government or the Nuclear Facility Operators to pay for the dissemination of emergency planning information. Without such information, parents will not be able to protect their children.

4) If a nuclear accident occurs while children are home but parents are not, the children will become part of the "transportation dependent population." The children would be expected to walk up to a mile to a bus stop and wait outside, possibly at the height of radiation exposure, to be evacuated by bus.

5) Children whose parents do not have cars will be part of the "transportation dependent population." These children will be expected to walk up to a mile to a bus stop and wait outside, possibly at the height of radiation exposure,

to be evacuated by bus.

6) The buses planned to be used to evacuate the transportation dependent population are the same buses which will be used first to evacuate schools. Thus, any pre-school children or home-bound children who are dependent on public transportation will be required to wait an undetermined amount of time, which could be several hours, at a time when speedy evacuation of the affected area will be crucial.

7) There are not enough school buses to effect a timely evacuation of all school children.

8) Bus drivers from areas outside the ten-mile EPZ will be called on to enter the EPZ to evacuate school children but there is no way to assure their cooperation.

9) The Radiological Emergency Response Plan does not require adequate trained staff on buses, at school reception centers, or at congregate care centers to handle the psychological trauma which children will undergo in a nuclear emergency. Frantic, uncontrollable behavior may hamper the entire emergency response effort.

10) Voluntary participation of school personnel in an emergency is depended upon and should not be. Teachers, administrators, and staff will have their own family concerns to attend to.

11) Voluntary participation of bus drivers is depended upon and should not be.

12) School bus drivers are known to be difficult to locate when not on duty and thus cannot be counted on to drive buses during an evacuation. At the very least, locating bus drivers will add time to the evacuation procedures.

13) School personnel have no particular radiation disaster training and thus are ill equipped to become emergency workers in such a situation.

14) Bus drivers have no particular radiation disaster training and thus are ill equipped to become emergency workers in such a situation.

15) School reception centers and congregate care centers are not equipped with any emergency supplies.

16) If a nuclear emergency occurs during after-school hours, many children will be at publicly and privately sponsored cultural and athletic pursuits such as music, ballet, scout

at any other site. Furthermore, the psychological effects of postulated radiological emergencies are not a proper subject for consideration under the Atomic Energy Act or the Commission's orders relating to this proceeding. The assertions that children generally are not adequately protected by the Indian Point Radiological Emergency Response Plan is insufficiently specific to form the basis for a proper contention.

Bases 1, 3, 4, 5, 16, 17, 18 and 19 are not site-specific, but rather allege conditions which, even if correct, would be equally applicable at all nuclear reactor sites, in that they allege a deficiency in the NRC's generic emergency planning requirements on the grounds of inadequate attention to the needs of children; the complaint is as to the Commission's emergency planning regulations, and has nothing to do within Indian Point. These bases cannot form an adequate ground for an admissible contention. Bases 2, 6 through 15, and 20 through 22 might form the basis for an acceptable contention which was limited to these bases only, except that the basis that emergency planning information should be available in several languages is not site-specific and is an attack upon the NRC's emergency planning regulations.

Contention II:

Children outside the ten-mile EPZ are particularly susceptible to the physical effects of radiation and to the psychological trauma of a disaster and are not adequately protected by the Radiological Emergency Response Plan.

Bases for Contention II:

1) The radiation dose absorption rate for children is significantly higher than for adults, but correspondingly heightened protective measures have not been designed for them.

2) There is no plan for attending to the psychological needs of children outside the ten-mile EPZ who will be traumatized by perceiving a large scale nuclear emergency.

3) Families residing outside the ten-mile evacuation planning zone are likely to take their own protective measures to insure the safety of their children. These measures may include self-evacuation which, carried out in an ad hoc fashion, could hamper the evacuation of those within the ten-mile radius.

4) Advance planning of likely contingencies must be formulated to protect children both within and without the ten-mile EPZ.

5) Families residing outside the ten-mile EPZ have been given no information or instruction as to how to protect their children from the possible ingestion of radiation. To be effective, emergency planning information regarding the ingestion of radiation-contaminated food and water must be widely disseminated, extremely detailed, and available in several languages.

6) There is no financial commitment on the part of the state or the Nuclear Facility Operators to pay for the dissemination of emergency planning information.

7) Special institutions outside the ten-mile EPZ will have special problems in dealing with a nuclear emergency. The resources of Blythedale Children's Hospital and the New York School for the Deaf, for example, will be strained as frantic parents try to make arrangements for their children, and as institutional staff are distracted by their own parental concerns.

Con Edison's Response to Contention II:

This contention is not acceptable as it has no site-specific aspects, and in effect challenges the NRC regulations requiring comprehensive emergency planning only within a ten-mile radius of a nuclear reactor site. There is no suggestion

in the contention that children, and even children living at great distances from the reactor sites, are any different at Indian Point than at any other site.

All of the bases for Contention II are non-site-specific and all challenge the NRC's regulations relating to the radius of the ten-mile plume exposure pathway Emergency Planning Zone.

#### Contention III:

Adequate consideration has not been given to parental and child behavior and to family decision making patterns in the emergency planning process.

#### Bases for Contention III:

1) Panic will ensue when parents and children, at different locations, cannot communicate with each other.

2) Parents are expected, under many circumstances, to evacuate without their children. Parents are unlikely to leave the area without their children. Particularly severe problems are likely to ensue when parents who are working outside the ten-mile radius but whose children are within the ten-mile radius at the time of an accident, return to the area in order to evacuate as a family unit.

3) Parents will attempt by any means possible to get to their children. They will converge on schools, causing traffic congestion, confusion, and a delay in the evacuation process.

4) Most parents will not train their children in emergency procedures.

5) Children who have been informed of the proper emergency procedures cannot be relied upon to carry them out without guidance. Thus, children who are at home without parents or caretakers will not be able to carry out an evacuation (i.e., get to the designated bus stop) on their own.

6) The only way to overcome parents' natural impulse to flee with their children, to forestall panic, and to insure an orderly evacuation is to hold frequent drills and to disseminate emergency planning information on a large scale.

7) There is no financial commitment to conducting any drills.

8) Frequent drills, although essential to the success of an evacuation, would be very costly, damaging, disruptive, and traumatic, especially to children.

9) Children should not be subject to the emotional trauma and potential physical harm of radiological emergency drills, but without such drills, parents, children, and emergency personnel cannot be expected to perform adequately during a real emergency.

Con Edison's Response to Contention III:

This contention is not admissible, since it has no aspects which specifically relate to the Indian Point site, and constitutes a generalized attack upon the NRC's emergency planning regulations.

The bases for this contention posit several instances of parent-child confusion relating to emergency planning, which are not even peculiar to radiological emergencies, much less to the Indian Point site. Several of the bases also complain of supposed adverse consequences of radiological emergency planning drills, notwithstanding that such drills are required by NRC regulations. These are inadmissible as bases for a contention since they constitute an attack upon NRC regulations.

Contention IV:

The physical and psychological environment of children will be improved by permanently shutting down the Indian Point Nuclear Power Station.

Bases for Contention IV:

1) The risk of an accident with a potential for off-site releases of radiation, core degradation, and/or loss of

containment integrity will be significantly reduced by cold shutdown of Units 2 and 3.

2) Parents, teachers, doctors, and other caretakers of children feel anxiety because of the continued operation of Indian Point. These anxieties are communicated to children and would be significantly reduced by cold shutdown of Units 2 and 3.

3) Workers in the plant who are parents or potential parents are exposed to unacceptable levels of radiation due to operational and management practices at the plant. These workers are at risk of disease and genetic damage to their offspring. These risks will be reduced by shutdown of Units 2 and 3.

Con Edison's Response to Contention IV:

This contention is unacceptable because postulated psychological damage claimed for nuclear power plants is not a proper subject for consideration under the Atomic Energy Act, nor is it permitted under any of the Commission's enumerated questions in this proceeding. The reference to the improvement in the physical environment which would be accompanied by shutting down Indian Point is a "Question 1" contention which does not meet the requirements of footnote 5 of the Commission's September 18 order. There is also nothing site-specific about this contention, there being nothing to suggest that the physical or psychological environment around Indian Point is different from the physical or psychological environment around any other nuclear power plant.

Bases Nos. 1 and 3 to Contention IV refer to accident risk but do not meet the requirements of footnote 5. Basis No. 2 is inappropriate for the same reasons regarding supposed psychological harm as pertain to Contention IV itself.

Contentions of West Branch Conservation Association

Contentions:

Petitioner seeks leave to intervene with respect to the following issues:

a. The feasibility of evacuation in the event of an emergency at Indian Point.

b. The feasibility of staying in place in the event of an emergency.

c. The willingness of others to accept refugees from the emergency.

d. The feasibility of the ten-mile limit inside which we reside as a demarcation.

e. The transportation routes available.

f. The plan for reunification of families.

g. The safety and possible realistic life of the physical plants #2 and #3.

h. The economic benefits of continued operation of units #2 and #3, if any. The concomitant liabilities of costs and who will be bearing them.

Con Edison's Response to Contentions:

The above contentions of West Branch Conservation Association are set forth in paragraph 5 of its Petition for Leave to Intervene. Contentions a, b and c are too vague and non-specific to constitute proper contentions. Contention d has been withdrawn. Contentions e and f might form the basis for acceptable contentions if they were set forth with greater specificity. Contention g, insofar as it relates to safety, is a "risk" claim which does not meet the requirements of footnote 5 of the Commission's September 18 order. The "possible realistic life" of the Indian Point units is not an acceptable contention because it is not

within the scope of the Commission's enumerated questions. The first sentence of Contention h might form the basis for a proper contention if it were restated with greater specificity. The last sentence of Contention h does not fit within the scope of the Commission's questions.

#### Contentions of Rockland Citizens for Safe Energy

##### Contention (1):

It is contended that in the event of delay in notification of county, state and Federal officials by licensee of a site or general emergency situation at the Indian Point nuclear facility, or in the event of rapid escalation to General Emergency Action Level with possibilities of prompt major release of radiation, the amount of time available for evacuation as a chosen protective action will be inadequate.

##### Bases for Contention (1):

(a.) At 10 CFR 50.47 (b)(10), it is required that "A range of protective actions have been developed for the plume exposure pathway EPZ for emergency workers and the public. Guidelines for the choice of protective action during an emergency consistent with Federal guidance are developed and in place. . ."

(b.) It is stated in NUREG-0654, I D 3: "Time Factors Associated with Releases: The range of times between the onset of accident conditions and the start of a major release is of the order of one-half hour to several hours." In the event of a half-hour to several-hour time frame within which to operate, the evacuation time estimates as outlined in NUREG-0654, Appendix 4, Section J 8) and as set forth in Parsons Brinckerhoff Quade & Douglas, Inc.'s Evacuation Time Estimates for Areas Near the Site of Indian Point Power Plants, January 30, 1981, as well as revised time estimates provided in the Rockland County Radiological Emergency Response Plan (hereinafter referred to as RCRERP), Rev. 1, would allow far less time than needed to evacuate the plume exposure pathway EPZ given, among other contingencies: (1.) the large numbers of Rockland residents to be evacuated; (2.) existing highway network in Rockland County in which major (and only) egress routes for large numbers of people are narrow and without shoulders, contain steep hills, sharp curves, narrow bridges, many traffic lights and other

roads and driveways emptying into them (e.g. New Hempstead Road in New City and Route 9W in Stony Point); (3.) lack of guaranteed availability of adequately protected emergency personnel and equipment to move the population in the required time. For example, many drivers for school buses will be working at other jobs, away from bus garages, and large numbers of children will be dependent upon them. The Evacuation Time Estimates provided in the RCRERP do not appear to take such items into account.

Con Edison's Response to Contention (1):

This is not a proper contention inasmuch as there are no specific claims asserted about the Indian Point site, but only a generalized allegation about the possible consequences of delayed notification of a postulated emergency. The reference in Contention (1) to releases of radiation relate to Question 1 of the Commission's September 18 order, but do not meet the requirements of footnote 5.

Basis (a) for Contention (1) is a recitation of a portion of the NRC's emergency planning regulations which does not support the contention. Basis (b) relates in principal part to radiation releases without meeting the requirements of footnote 5 of the Commission's September 18 order. The reference to the large number of Rockland residents, the existing highway network in Rockland County, and the adequacy of emergency personnel might form the basis of an appropriate contention if it were confined to these subjects and set forth with greater specificity.

Contention (2):

It is contended that the use of evacuation as a protective action, especially when working within a short time-

frame (as delineated in previous RCSE contention) is dependent, in part, upon prompt and accurate notification by licensee. Such notification cannot be assured.

Bases for Contention (2):

(a.) Past experience involving Consolidated Edison and other utilities indicates that such prompt notification cannot be assured as outlined in NUREG-0654.

(b.) Findings with reference to the October 1980 leak in Indian Point Unit 2 fan cooler detail lack of prompt notification of authorities as well as other examples of misunderstanding and poor judgment.

(c.) Findings with reference to the Three Mile Island accident of March 1979 detail Metropolitan Edison's failure to notify authorities of difficulties.

Con Edison's Response to Contention (2):

Contention (2), asserting that notification time for certain radiological accidents might be inadequate, is not an appropriate contention because it postulates accident scenarios said to require prompt notification without complying with the requirements of footnote 5 of the Commission's September 18 order. There is also nothing site-specific about the contention, nor is it set forth with sufficient specificity as to the supposed failure of prompt notification.

Basis (a.) for Contention (2) is an inappropriate basis for a contention for the same reasons as the contention itself. No basis for a failure of prompt notification is set forth. Basis (b.) for Contention (2) does not form the basis for a proper contention because there is no assertion that the October 1980 leak event at Indian Point Unit 2 is analogous to an event which would require the implementation of the

provisions of the Rockland County Radiological Emergency Plan. Basis (c.) for Contention (2) specifically relates to another utility rather than to Indian Point, and thus does not meet the site-specific requirement.

Contention (3):

It is contended that in the event of a major radiological emergency involving Indian Point, provisions for prompt communication among principal response organizations to emergency personnel and to the public, as required by 10 CFR 50.47 (b)(6) do not exist.

Bases for Contention (3):

(a.) Adequate Rockland County communications systems such as telephone lines, radio frequencies and telecommunications centers, as detailed in NUREG-0654, criterion C 1 c, do not exist, according to Rockland County officials responsible for communications (cf. public and recorded statements by James Kralik, Chief of the Rockland County Sheriff's Patrol; the Sheriff has lead responsibility in Communications: RCRERP Rev. 1, III-8). In the event of public notification of a site or general emergency, normal capacities of communications systems would be exceeded to the point where they could not function (cf. Rogovin Report, Volume II Part 3, page 1041, for description of breakdown of communications in area of Three Mile Island).

(b.) Public safety is dependent upon a functioning telephone network. Requests for public assistance for those residents unable to help themselves must come through simple phone calls to a central number. Past experience (cf. Rogovin Report) dictates that the line cannot handle the volume of calls which would be anticipated.

Con Edison's Response to Contention (3):

This contention is not appropriate because only a blanket absence of "provisions for prompt communication" among emergency response personnel is asserted, without any statement of the particular deficiencies claimed. The topic of the adequacy of emergency response communications is an appropriate

one for this proceeding if such a contention were set forth with reasonable specificity.

Bases (a.) and (b.) for Contention (3) suffer from the same lack of particularity and specificity as does the contention. Basis (b.) has no Indian Point aspects at all. The references to communications difficulties at Three Mile Island and the "Rogovin Report" are not site-specific, and therefore cannot form the basis for an acceptable contention.

Contention (4):

It is contended that the use of sheltering as a protective action, as outlined in NUREG-0654 and as developed in the RCRERP Rev. 1, is inadequate in major releases of radiation.

Basis for Contention (4):

The air turnover rate in the standard residence permits infiltration of air-borne contaminants such as radionuclides. Numerous recognized studies describe rates of infiltration.

Con Edison's Response to Contention (4):

Contention (4) is not a proper contention because it is an attack upon NRC regulations insofar as they permit and recommend sheltering as an appropriate protection action under certain circumstances. Furthermore, there is nothing site-specific about Contention (4) or its stated basis.

Contention (5):

It is contended that no information has been made available to the public regarding notification and initial actions in the event of an emergency at Indian Point, such as is required in 10 CFR 50.47 (b)(7).

Basis for Contention (5):

As residents of Rockland County, many of whom live within the ten-mile plume exposure pathway EPZ, none of the members of Rockland Citizens for Safe Energy has received any such notification to date.

Con Edison's response to Contention (5):

Contention (5) is a proper contention, as is the basis therefor.

Contentions of the Westchester People's Action Coalition

Contention 1:

The New York State Radiological Emergency Plan including the Westchester County Plan (the Plan), addresses a problem of unprecedented scope. Its proposals for notification, communication and evacuation relies on people, equipment and procedures. The people (including many who would have to be volunteers) have not been trained or even properly informed. The equipment is inadequate. The procedures are ineffective.

Bases for Contention 1:

a) Many public officials with key responsibilities remain unaware of the details of the Plan. Most officials below County Department heads may be so characterized.

b) Most citizens do not know that a plan exists. Others do not know how to learn its contents or are blocked from securing copies. Only a handful have ever seen a copy.

c) The American Red Cross, which is assumed to play a key role in coordinating and staffing congregate care centers may not have the resources to assume all of these responsibilities. For example, the organization is unprepared to provide mass care facilities which house both contaminated and uncontaminated people.

d) Bus service is not adequate for handling mass school evacuations as well as carrying all persons without personal automobiles. Nor is such service effectively committed to these assignments by its private operators.

e) Ambulances are insufficient in number, inadequate

in equipment, and not readily available from the private sector. Drivers do not have adequate special radiological training.

f) The density of traffic in relevant areas will necessarily result in collisions for which there is insufficient towing and repair services.

g) Neither policemen, firemen, nor "traffic control officers" can be expected to subject themselves to continued radiation exposure as they assist all others to evacuate.

h) Individuals who have not committed themselves to public service are likewise "drafted" to subject themselves to unreasonable exposure. For example, gas station operators are involuntarily designated to remain outdoors at work dispensing fuel during evacuation. Similarly, teachers are designated to remain with their students rather than join their families for evacuation.

i) Many of the reception centers are high schools, and they are usually not situated or laid out to facilitate passage of thousands of automobiles in a short time. No approval or appropriation of funds or even designation of personnel or resources have been secured from local officials.

j) There is insufficient provision for radiological and other monitoring equipment and activities.

#### Con Edison's Response to Contention 1:

Contention 1 complains of inadequate training, equipment and procedures for the New York State Radiological Emergency Plan and the Westchester County Plan. It is too generalized and non-specific to be accepted as a contention.

Basis a) for Contention 1 might form the basis for a proper contention if it identified the individuals who are allegedly unaware of the details of the plan, and if it specifically described the portions of the plan of which they are unaware. Basis b) is not the proper basis for a contention in that there is no claim that a citizen must know the contents

or have seen a copy of the plan in order to be protected by its terms. Basis c) is speculative, and thus inappropriate, since it asserts only that the American Red Cross "may" have inadequate facilities to assume responsibilities under the plan without setting forth any basis for such speculation. Bases d) and e) might form the proper bases for contentions if asserted with greater specificity as to the areas in which bus and ambulance service are claimed to be inadequate and the reasons for such a claim. Basis f) might form the basis for a proper contention if the areas in which collisions caused by traffic density and the significance thereof were set forth with greater particularity. Bases g) and h) are inappropriate bases for contentions in that they postulate a radioactive plume interfering with emergency plan activities without supplying any grounds for the assumption that evacuation activities could not be completed prior to exposure to radiation. The assumption that evacuation activities would occur during radiation exposure depends upon assumptions regarding postulated accidents which are not set forth in accordance with the requirements of footnote 5 to Question 1 of the Commission's September 18 order. Basis i) might form the proper ground for a contention if those reception centers claimed to be inadequate were described and the claimed inadequacies detailed. Basis j) is not particularized at all, and thus cannot possibly form the basis for a proper contention. Also, the postulated accidents for which monitoring is claimed to be inadequate are not set forth as required by footnote 5.

Contention 2:

The trigger for the Plan -- effective and reliable communication among the facility operators, public officials and the public -- is fatally flawed.

Bases for Contention 2:

a) The Plan relies to a substantial extent on the nuclear facility operators, Con Edison, and the Power Authority of the State of New York for timely communication, accurate information, and objective evaluation of potentially and actually hazardous conditions as well as for "assurance of means for implementation of the notification system." The history of these operators -- against the backdrop of the nuclear utility industry's entire record -- demonstrates that this confidence is misplaced. This is so notwithstanding the possible improvement of some channels of communication following Con Edison's derelictions in connection with the infamous "flooding incident."

b) As recently as August 21, 1981, the Commission Staff emphasized the significant deficiencies in on-site emergency preparedness. These included ill-defined organization assignment and training of personnel, emergency equipment improperly equipped, and generally ineffective administration of the development and implementation of a plan.

c) Built into the Plan is the warning that the "incident" being planned for "is not expected to pose a serious health hazard." This is purposefully inaccurate since the requirements for formulating a plan presuppose that there is such a hazard.

d) The drain on telephone service (including notification of emergency workers at home) will be intolerable. The telephone company cannot be expected to install additional lines rapidly on an emergency basis.

e) The Plan ignores the needs of the hearing-impaired and non-English speaking people to learn of the emergency. Westchester has substantial numbers of each.

f) The sole reliance for warnings on a system of sirens is ineffective for a number of reasons. The number of sirens is inadequate. There is no back-up system. They furnish warning only to persons out-of-doors.

Con Edison's Response to Contention 2:

This contention, asserting inappropriate provisions for

notification of emergency planning officials and the public, is not set forth with sufficient particularity to be accepted as a contention.

The first two sentences of basis a) for Contention 2 do not supply a basis for a proper contention in that they attack the notification requirements of the Commission's emergency planning regulations, and rely upon a supposed inability of nuclear power plant operators generally to effectuate notification. This basis is thus also defective in that it is not site-specific. The last sentence of basis a) for Contention 2 does not form the basis for a proper contention because there is no assertion that the "flooding incident" is analogous to an event which would require the implementation of the provisions of the New York State Radiological Emergency Plan. Basis b) for Contention 2 does not form the proper basis for a contention because it is insufficiently specific as to the particular deficiencies relied upon. Basis c) is not the proper basis for a contention because it is insufficiently specific and apparently does not relate to the Indian Point site in particular, but is instead an attack upon the Commission's emergency planning regulations. Basis d) might form the proper basis for a contention if asserted with greater particularity. Basis e) is not a proper ground for a contention, in that it is an attack upon the Commission's emergency planning regulations for their failure to make special provisions for handicapped and non-English speaking people. Moreover, this basis

is not site-specific in that there is no assertion that there are any greater number of such persons in the vicinity of Indian Point than at other sites. Basis f) is an insufficient basis for a contention insofar as it attacks the generic sufficiency of sirens as satisfying the prompt notification requirements set forth in Commission emergency planning regulations. Such a basis for a contention is not site-specific, and thus inappropriate. Assertions that the number of sirens at the Indian Point site is inadequate might form the basis for a proper contention if the grounds for such claimed inadequacy were set forth with particularity.

Contention 3:

The Plan does not provide for effective drills.

Bases for Contention 3:

a) Practices and drills are provided for only a few county agencies. Within these agencies only the top levels of officials are involved and only on theoretical bases. A drill for all agencies and, even more importantly, for the general public is indispensable for testing and refining the Plan and preparing Westchester citizens for its possible execution.

b) Effective drills are precluded by the present state of public ignorance of the Plan.

c) Effective drills are precluded by their cost. There is no effort to secure required funding. Moreover, out-of-pocket costs would be dwarfed by the costs of disruption to the extensive business conducted in Westchester.

d) Effective drills are precluded because they can only simulate one situation at a time and the variant atmospheric and other circumstances surrounding an accident are many.

Con Edison's Response to Contention 3:

This contention is not set forth with sufficient particularity or specificity to be accepted as a contention.

Bases a) through d) for Contention 3 are insufficient grounds to support a contention in that there is no assertion that emergency planning drills at the Indian Point site are to be conducted in a manner different from drills at other sites, particularly since all drill scenarios are reviewed by FEMA and the NRC staff in advance. The bases are therefore not site-specific.

Contention 4:

The Plan is based on fallacious assumptions of human behavior.

Bases for Contention 4:

a) The Plan states that "access to limited access roadways outside the EPZ will be prohibited in the direction of evacuation flow . . . ." This is guaranteed to provoke panic and disorganization as tens of thousands of people outside the EPZ, especially in densely populated central and southern Westchester, try to self-evacuate. The resulting pandemonium will make this direction unenforceable as a practical matter.

b) Directions to day care centers fail to take account of parents who work outside of the EPZ and are not allowed back in. Nor does it take account of other homes predictably empty. The Plan recognizes that "young ages and consequent parental concern" require special treatment, but does not come up with a practical suggestion.

c) Parents cannot be expected to refrain from driving to schools to pick up their children.

d) In several areas, people are told to drive opposite to their normal direction of outward travel in order to reduce congestion on Route 9A. This is unrealistic because people will resist unfamiliar and apparently erroneous routing.

e) In certain areas, people living immediately adjacent to the Taconic State Parkway are told to drive east on local streets. This is unrealistic.

Con Edison's Response to Contention 4:

This contention is inappropriate in that it is not site-specific but instead asserts the non-workability of Commission emergency planning generally based upon unspecified assumptions about human behavior.

Bases a) through c) for Contention 4 do not form a proper basis for a contention in that they postulate the unworkability of radiological emergency planning due to supposed citizen panic and disorganization. There is no assertion that these supposed impediments to emergency planning are in any way peculiar to the Indian Point site. Bases d) and e) for Contention 4 might form the proper basis for a contention if the areas susceptible to traffic congestion, and the extent of such supposed congestion, were set forth with greater particularity.

Contention 5:

The Plan relies on unworkable traffic routings for the high population density of Westchester.

Bases for Contention 5:

a) The overall road network is antiquated and inadequate. East-West roads are uniformly narrow and winding.

b) Tens of thousands of people are expected to evacuate down Route 9A south through Briarcliff -- a road which is bumper-to-bumper every morning rush hour.

c) Perhaps as many as 15,000 people are expected to

get on the Taconic Parkway north via Route 202, another daily bottleneck.

d) Many thousands of people are expected to take the Taconic Parkway south, with half of them getting on at the same entrance, Baldwin Road in Yorktown.

e) There is no guarantee of indispensable updating as to population, road capacity, etc.

Con Edison's Response to Contention 5:

A contention based upon the unsuitability of evacuation routes might be acceptable if stated with sufficient particularity as to the areas and routes which are claimed to be subject to "unworkable" traffic difficulties, and if the specific impact of such supposed traffic difficulties upon effective evacuation were set forth.

Bases a) through d) for Contention 5 might form the proper basis for a contention if the routes which were claimed to be subject to congestion in the event of a radiological emergency, the areas to be evacuated which were affected by these routes, and the impact of such supposed congestion upon the postulated evacuation, were set forth with greater particularity. Basis e) is too general and non-specific to form the basis for a contention. There is no assertion that the updating of the Indian Point radiological emergency plan is conducted in any fashion different from the updating of plans at other sites. If the updating of radiological emergency plans generally is claimed to be inadequate, then such a basis is inadequate for a contention because it is an attack upon the Commission's radiological emergency planning regulations.

Contention 6:

The Plan treats people as statistics and as fungible with each other. They may well be, once the accident occurs. But a response plan must focus on people, if not as individuals, as least in meaningful groups. It must take into account known attributes of groups which bear heavily on the feasibility of evacuation strategies. There are many in Westchester whose circumstances would leave them behind as the majority flee.

Bases for Contention 6:

- a) The patients at the Franklin Delano Roosevelt Hospital in Montrose, located approximately one mile from the plant, would be precluded by the physical and psychological disorders from effective evacuation of the area.
- b) The senior citizens throughout the community would need assistance which would be unavailable.
- c) The handicapped children at the Asthmatic Children's Foundation home in Ossining, and at the Blythedale Children's Hospital in Valhalla (including day patients), would lack the necessary resources for an emergency particularly to the extent the staff is depleted.
- d) The residents at the New York School for the Deaf in White Plains would not only suffer from lack of access to the audible warnings but would also suffer from depletion of staff.
- e) The inmates of Ossining Correctional Facility would apparently remain behind walls supposedly shielding them from radiological exposure but which would not do so, in fact.
- f) Westchester Association for Retarded Citizens has community residences throughout the area, the residents of which would be disoriented by the emergency conditions and panic.
- g) There are a number of nursing homes in the area such as the Skyview Nursing Home in Croton-on-Hudson which would lack the resources to cope with the problems faced by its residents.
- h) If an accident occurs during summer, large numbers of people, particularly young persons, can be expected to be at many parks and outdoor areas, such as George's Island (approximately a mile from the Point), Croton Point Park, Blue Mountain Reservation, as well as in the large state parks across

the river, Bear Mountain and Harriman State Parks. Communication and evacuation for such persons will be impossible and has not even been considered in the Plan.

Con Edison's Response to Contention 6:

This contention is not appropriate in that it does not assert that special category evacuees are more numerous, or are treated any differently at the Indian Point site, than at any other nuclear reactor site. If the contention criticizes the treatment of special category evacuees generally, then it is an unacceptable contention because it constitutes an attack upon Commission radiological emergency planning regulations.

Bases a) through g) for Contention 6 are inadequate as the basis for a contention in that there is no assertion that handicapped or other special category persons are treated any differently under the Indian Point emergency plan than under any other plan, or that persons in such categories are more numerous than in any other nuclear reactor sites. Basis h) for Contention 6 relates to summer recreational transients, and is inadequate as the basis for a contention because there is no assertion that such persons are more numerous, or are treated differently, than in any other nuclear reactor site. Nor is there any particularized assertion as to how the evacuation of any of these persons would be affected or would be inadequate.

Contentions of the Union of Concerned Scientists  
and New York Public Interest Research Group  
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Contention I (A):

Emergency planning for Indian Point Units 2 and 3 is inadequate to protect the health and safety of the public because the existing plans do not conform to the requirements of 10 CFR 50.47, in that they do not meet any of the sixteen mandatory standards of 10 CFR 50.47(b).

Bases for Contention I (A)

(1)\* The sixteen substantive standards at 10 CFR 50.47 (b) must be met by each and every plan for which the standards are applicable. The language of 10 CFR 50.47 (b) clearly states that "(t)he onsite and offsite emergency response plans for nuclear power reactors must meet the following standards . . .".

(2) Both NRC and FEMA regard all 6 of these substantive standards as "essential for an adequate radiological emergency plan" [See, NUREG-0654, Rev. 1, November 1980, page 5].

(3) 10 CFR 50.47 (b)(1) is not met because the emergency plans fail to delineate the relationships of the licensees, the State and governments, and support organizations to the total planning and response effort. Further, the emergency response organizations (including the licensees, Federal, State, and Local governments, and support organizations) have failed to fully document the existence of appropriate letters of agreement with support organizations and agencies; moreover, where letters of agreement are provided, they are outdated (more than one year old), and fail to describe mutually agreed upon provisions for the exchange of information relevant to the provision of such emergency measures and services [Appendix A, Indian Point Unit 2 Emergency Plan, December 1980]. Thus, there is no reasonable assurance that the emergency plans have been integrated into a functional, total plan, and there is no reasonable assurance that conflicts between the provisions of the various plans have been avoided.

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\* The bases for the various contentions advanced by UCS/NYPIRG were unnumbered. They have been numbered here for ease of cross-reference.

(4) 10 CFR 50.47(b)(2) is not met because the licensees have failed to demonstrate that each person in the line of succession for the "emergency coordinator" position is qualified and fully trained in order to adequately fulfill that role in an actual emergency. Further, the licensees have not committed to meet the "minimum staffing requirements" of Table B-1 of NUREG-0654, Rev. 1, November 1980, pages 37-38. The licensees have not demonstrated the prompt availability of sufficient operational, maintenance, supervisory, technical support, and administrative personnel to adequately respond to an accident, including accidents which are beyond the design basis of the Indian Point units.

(5) 10 CFR 50.47(b)(3) is not met because the licensees have failed to make arrangements to participate in the Federal Radiological Monitoring and Assessment Program (FRMAP), nor have the licensees demonstrated that they have made arrangements with any other support organization that has the same capabilities as FRMAP. In addition, the plans generally fail to indicate in what time frames the expected emergency response support and resources will be available for implementation. There exist no criteria in the plans for use in determining the most efficient and most productive use (in terms of protecting the public health and safety) of available services and resources should such services and resources become wholly or partially unavailable or should such services and resources be inadequate to respond to a particular emergency situation. Further, adequate diverse communications capabilities with all required off-site support organizations have not been provided to assure the availability of communications under such circumstances as loss of normal power, technical problems with commercial telephone service, and adverse weather affecting normal communications systems.

(6) 10 CFR 50.47(b)(4) is not met because the licensees have failed to establish adequate "emergency action level" (EAL) criteria as provided for in Appendix 1 to NUREG-0654, Rev. 1, November 1980. Further, the licensees have provided no basis upon which there can be reasonable assurance that their specified EAL's constitute a sufficient set of parameters and action levels for all possible accidents. Absent such a basis, there can be no reasonable assurance that all accident sequences with off-site consequences will be timely recognized in order to permit the effectuation of the emergency response plans. In addition, there has been no demonstration that the EAL's chosen by the licensees adequately account for the lead times necessary to implement protective actions which will be required in response to the emergencies which caused the EAL's to be exceeded [See, William W. Chenault, et. al., Evacuation Planning in the TMI Accident, RS 2-8-34, January 1980, prepared by Human

Sciences Research, Inc., for the Federal Emergency Management Agency; the report states that "(t)hose charged with the 'scientific' analysis of a hazard will frequently not take account of the lead times required to execute population protection measures. That is, they will tend to decide when a causal agent has become dangerous to people -- without allowing for the time required to react to the threat and protect people."; page 44].

(7) 10 CFR 50.47(b)(5) is not met because the prompt notification capability (as required at 10 CFR Part 50, Appendix E, Section IV.D.3) has not been fully implemented. Moreover, the licensees have not provided reasonable assurance that the prompt notification system (even once it is fully installed) will be operable when it is needed in response to a radiological emergency at Indian Point Units 2 and 3 (there have been siren alerting system tests at several nuclear power plants in which a number of sirens have failed to function on demand). The content of EDS messages is insufficient to adequately assure proper response. Further, the proposed prompt notification system fails to provide adequate notice to non-English speaking residents of the plume EPZ, to the deaf and hearing-impaired, the members of the population with learning disabilities, "latch-key" children, and other special populations. Further, the annual distribution of emergency-related information required by Appendix E to 10 CFR Part 50, Section IV.D.2., has not been performed, nor have the materials proposed to be distributed been publicly released, thus preventing any consideration of the adequacy of such materials.

(8) 10 CFR 50.47(b)(6) is not met because it has not been demonstrated that sufficient and diverse communications capabilities exist between and among the emergency response organizations to assure effective emergency response under a range of conditions, including heavy traffic on commercial communications, adverse weather, and loss of normal power sources (See, Post Exercise Assessment -- Exercise of the New York State and Oswego County Radiological Emergency Plans for Nine Mile Point Nuclear Power Station, September 30, 1981, attached to letter from Vincent Forde, Acting Regional Director, FEMA Region II to William C. Hennessy, Chairman, Disaster Preparedness Commission State of New York).

(9) 10 CFR 50.47(b)(7) is not met because transients who may be in the plume EPZ during an accident are not adequately notified of the existing emergency response system and what they are expected to do in a radiological emergency. Further, the public education program is not adequately developed; see above under 10 CFR 50.47(b)(5).

The number of transients for Westchester County alone is potentially ten to thirteen thousand persons (Memorandum dated February 13, 1981 from Joseph Caverly, Commissioner to David Smith, Office of the County Executive).

(10) 10 CFR 50.47(b)(8) is not met because the licensees' emergency response facilities (Technical Support Center, and Emergency Operations Facility) do not comply with applicable provisions of the regulatory guidance contained in NUREG-0696. Further, there has been no demonstration by the licensees that these facilities are sufficiently equipped and staffed to promptly and adequately respond to an accident at Indian Point (including accidents which exceed the design basis of the Indian Point units). In addition, there has been no demonstration that the emergency radiation monitoring capabilities of the emergency response organizations (in terms of equipment and trained staff members) is sufficient to permit a prompt and adequate response to such accidents (See, Post Exercise Assessment, op. cit., item I.8; also, Memorandum dated February 25, 1981 from Calvin E. Weber, Assistant Commissioner of Health to Anita S. Curran, Commissioner of Health, Westchester County). In NUREG-0396, the joint EPA/NRC Task Force on Emergency Planning took the position that "[A]cceptable values for emergency doses to the public under the actual conditions of a nuclear accident cannot be predetermined." The Task Force goes on to state, "The emergency actions taken in any individual case must be based on the actual conditions that exist and are projected at the time of an accident." [NUREG-0396, December, 1978, pages 2-3]. If this is the case (and we take the position that this is an incorrect and inadequate position), then the adequacy of local accident assessment capabilities is an essential component of the emergency plans, since local governments will best know the real-time status of local conditions and capabilities. Indeed, the NRC has itself cited the licensee for Indian Point Unit 2 for "significant deficiencies" in its on-site emergency preparedness program, including "ineffective administration" of the program, "(i)ll-defined emergency organization and nonspecific assignment of personnel", "improperly equipped emergency facilities, and lack of on-site emergency equipment", and "(t)he existence of incomplete and deficient procedures for implementing the Emergency Plan" [See, letter dated August 21, 1981, from Boyce H. Grier, Director, NRC Region I, to John D. O'Toole, Vice President Nuclear, Consolidated Edison Company of New York, Inc.].

(11) NUREG-0396 takes the position that "(A)cceptable values for emergency doses to the public under the actual conditions of a nuclear accident cannot be predetermined." The report goes on to state, "The emergency actions taken in any

individual case must be based on the actual conditions that exist and are projected at the time of an accident." [See, NUREG-0396, op. cit., pages 2-3]. If this is the case (and we take the position that this is inadequate and incorrect), then the adequacy of local accident assessment capabilities is an even more essential component of the emergency plan.

(12) 10 CFR 50.47 (b)(9) is not met because reliance on the ARAC and MIDAS assessment systems has not been demonstrated to be sufficient for a range of accident conditions, including heated releases and a range of meteorological conditions and the local conditions present in the Indian Point area (i.e., the location in a "bowl", surrounded by high ground on almost all sites some 600 to 1,000 feet high, topography which "decisively" influences the meteorology of the area; Technical Report #372.1, "A Micrometeorological Survey of the Buchanan, New York, Area -Summary of Progress to 1 December 1955, Indian Point Unit #3, FSAR, Section 2.6). Further, it has not been demonstrated that sufficient accident assessment capabilities exist in the emergency response organizations to make rapid assessments of the potential magnitude and locations of radiological hazards caused by liquid and/or gaseous releases from Indian Point.

(13) 10 CFR 50.47(b)(10) is not met because the plans contain insufficient bases or criteria upon which to make choices of protective actions in the event of a radiological emergency at Indian Point Units 2 and 3. Further, the evacuation time estimates prepared by NSAD Research Corporation and Parsons, Brinckerhoff, Quade and Douglas, Inc., are inadequate for use in making protective action decisions (See, Contention I(B)(2), infra). In addition, it has not been demonstrated that sufficient thyroid protection is available to emergency workers in order for those workers to perform accident assessment and related emergency functions [See, Post Exercise Assessment, op. cit., Item J.10.e]. Further, a range of protective actions has not been developed in that the plans rely primarily on evacuation and sheltering as protective actions for the plume EPZ. It has not been demonstrated that these two protective actions, either singly or in combination, will be effective in protecting the public health and safety in the event of an accident at Indian Point Units 2 and 3 (including accidents which exceed the design basis for these units). In addition, it has not been demonstrated that there is sufficient, adequate sheltering capabilities within the plume EPZ for all residents and transients; indeed, even the sheltering afforded by the structures within the plume EPZ varies considerably in effectiveness.

(14) 10 CFR 50.47(b)(11) is not met in that methods

for permanent record-keeping of emergency response personnel radiation exposures have not been included within the plans [See, Post Exercise Assessment, op. cit., Item K.3.a]. Further, there has been no demonstration that decontamination facilities, equipment, supplies, and trained personnel to conduct such decontamination are available in sufficient quantity to adequately respond to an accident at Indian Point Units 2 and 3 (including accidents which exceed the design basis for these units). In addition, it has not been demonstrated that emergency response organizations have adequate capabilities to assess doses to emergency workers while they are responding to such accidents, nor has it been demonstrated that there is a sufficient supply of promptly available personnel dosimetry to respond to such accidents [See, Review of New York State Radiological Emergency Preparedness (REP) Plan, Section K, attached to letter dated April 5, 1981, from Vincent Forde, Acting Regional Director, FEMA Region II, to William C. Hennessy, Chairman, Disaster Preparedness Commission, State of New York]. Further, it has not been demonstrated that sufficient means for radiological monitoring of evacuees at relocation centers can be established in a timely and adequate manner.

(15) 10 CFR 50.47(b)(12) is not met in that existing hospital or other suitable medical facilities are not capable of caring for large numbers of irradiated and contaminated persons resulting from accidents at Indian Point (including accidents which exceed the design basis for the Indian Point units). It has also not been demonstrated that there are sufficient transportation resources available to transport such irradiated and contaminated persons to available facilities, nor that such transportation can be accomplished in a timely manner given that an evacuation may be in progress concurrent with the need to transport such persons [See, Post Exercise Assessment, op. cit., Item L.4].

(16) 10 CFR 50.47(b)(13) is not met in that a method for periodically estimating the total population exposure is not set forth in the plans [See, Post Exercise Assessment, op. cit., Item M.4]. Further, there is no guidance regarding the uses for such data in terms of the need to implement supplemental or additional protective actions. In addition, recovery plans and procedures are not sufficiently detailed as to provide reasonable assurance that the public health and safety will be adequately protected. There are no action level criteria or other objective criteria upon which to base decisions regarding the return of the general public to areas affected by a nuclear power plant accident at Indian Point Units 2 and 3 [See, Post Exercise Assessment, op. cit., Item M.1].

(17) 10 CFR 50.47(b)(14) is not met in that the conduct of and planning for drills and exercises is not sufficiently detailed in the plans. There is no assurance that such exercises and drills provide a sufficiently realistic test of emergency plans and response capabilities. Indeed, to the extent that participants in such drills and exercises have prior knowledge of the dates, times, and other details about such drills and exercises, such drills and exercises do not test preparedness, but rather provide only a minimal test of the ability of the involved organizations to follow procedures.

(18) 10 CFR 50.47(b)(15) is not met in that training criteria for emergency response personnel are not adequately set forth in the plans, thus there is no demonstration that such training is adequate. Accountability programs are not described in the plans to assure that the requisite training is in fact perceived by all necessary emergency response personnel. In fact, most of the necessary training has not yet taken place [See, Post Exercise Assessment, Item O 4.a through O.4.j].

(19) 10 CFR 50.47(b)(16) is not met in that there is not sufficient assurance that the public will be adequately informed of revisions to the emergency plans. There are no provisions for updating public information programs. There are no provisions for updating evacuation time estimates to account for new construction, long-term unavailability of major routes due to repair work, or changes in population. Further, it has not been demonstrated that the emergency response organizations possess sufficient expertise to properly utilize the evacuation time estimates given the actual conditions as opposed to the idealized conditions assumed for the purposes of the time estimate studies. There is no assurance that an adequate and appropriate level of preparedness will be maintained for so long as the Indian Point units operate.

Con Edison's Response to Contention I(A):

This contention, asserting non-conformance with the requirements of 10 CFR § 50.47, is a proper contention; however, several of the bases set forth in support of Contention I(A) are inappropriate.

Basis (4) for Contention I(A) is not a proper basis

for contention, in that it suggests that compliance with a NUREG is necessary in order to comply with an NRC regulation. NUREGs do not set forth "requirements," as asserted. NUREGs provide guidance to licensees but do not themselves comprise licensing requirements.

A similar deficiency exists with respect to basis (5) for Contention I(A), in that this basis suggests that participation in the Federal Radiological Monitoring and Assessment Program (FRMAP) is necessary to comply with NRC regulations. In fact, the cited regulation imposes no such requirement. This basis presumes that there are other emergency planning requirements set forth in 10 CFR § 50.47(b)(3) which are in effect not required by that section.

Basis (6) for Contention I(A) asserts in part that there are certain "lead times which are necessary to implement protective actions" in certain accident situations. This is a "risk" assertion which does not meet the requirements of footnote 5 of the Commission's September 18 order. Such a basis may only claim that "lead times" are inadequate based upon unstated assumptions made about unarticulated postulated accident scenarios, and in order for this to form the basis for an admissible contention, it is necessary that those scenarios be set forth in a manner complying with footnote 5.

Basis (7) for Contention I(A) is appropriate insofar as it asserts that the early warning system is not fully

implemented. However, this basis is not appropriate insofar as it alleges that the prompt notification system, upon installation, is inadequate. This basis does not contend that the prompt notification system at Indian Point is any different from the prompt notification system at other nuclear reactor sites, hence this portion of basis (7) for Contention I(A) does not comply with the Commission's orders in that it is not site-specific. This basis also complains of improper notification to non-English speaking and handicapped populations, which is not a proper ground for a contention, in that it is an attack upon the Commission's emergency planning regulations for their failure to make special provisions for handicapped and non-English speaking people. This basis is similarly not site-specific in that there is no assertion that there are any greater number of "special population" persons in the vicinity of Indian Point than at other sites. That portion of this basis relating to the distribution of public emergency information materials might form the basis for an appropriate contention.

Basis (8) for Contention I(A) is not an appropriate basis for a contention, in that it states that there is an affirmative duty on the part of licensees to demonstrate communication capabilities. 10 CFR § 50.47(b)(6) imposes no such requirement. Nor does the cited regulation require assurance of "effective emergency response under a range of

conditions, including heavy traffic on commercial communications, adverse weather, and loss of normal power sources." The cited section of the regulations requires only that "provisions exist for prompt communications among principal response organizations to emergency personnel and to the public." This basis for Contention I(A) seeks to expand upon this requirement and to impose requirements which are not contemplated by the regulation itself.

Basis (9) for Contention I(A) is not an appropriate basis for a contention in that it implies that 10 CFR § 50.47 (b)(7) requires special notification procedures for transients, whereas the cited section of the regulations imposes no such requirement. Indeed, the cited regulation contemplates that "listening to a local broadcast station" will be the principal means of communication with the public during an accident. This basis does not suggest that transients as a group are any less reachable by radio or television than other populations. This basis is also unsuitable for a contention because it is an attack upon the Commission's emergency planning regulations for their failure to make special provisions for transient populations. Moreover, this basis is not site-specific, in that there is no assertion that there are a greater number of transients in the vicinity of Indian Point than at other sites.

Basis (10) for Contention I(A) is not a proper basis for a contention in that it suggests that compliance with a NUREG is necessary in order to comply with an NRC regulation. NUREGs

provide guidance to licensees but do not themselves comprise licensing requirements. This basis for Contention I(A) is also inappropriate in that it assumes that licensees have some obligation to "demonstrate" the adequacy of these facilities, whereas 10 CFR § 50.47(b)(8) imposes no such burden. That portion of this basis which asserts that emergency radiation monitoring capabilities are inadequate is not the proper basis for a contention in that it presumes certain effects caused by serious accidents at Indian Point without meeting the requirements of footnote 5 of the Commission's September 18 order. Contentions may only postulate inadequate "radiation assessment capabilities," or "acceptable values for emergency doses," and other conclusions dependent upon assumptions made about postulated accident conditions when those accident conditions are set forth as required by footnote 5.

Basis (11) for Contention I(A) also posits the adverse consequences of accidents, and surmises inadequacies in the plan based upon assumptions made about accidents, all without complying with footnote 5 of the September 18 order. This basis also improperly implies that a NUREG is a regulatory requirement.

Basis (12) for Contention I(A) is not an appropriate basis for a contention insofar as it asserts that NRC Regulations impose an affirmative duty upon licensees to demonstrate the adequacy of the ARAC and MIDAS assessment systems. 10 CFR § 50.47

(b)(9) imposes no such requirement. This basis also postulates special geographic and meteorologic conditions at the Indian Point site which are said to affect the radiological plume characteristics in the event of a postulated accident at Indian Point. However, these assertions do not comply with the requirements of footnote 5 of the September 18 order relating to postulated accident scenarios at Indian Point. This basis also states that licensees are obligated to "demonstrate" a capability for "rapid assessments of the potential magnitude and locations of radiological hazards," whereas the cited section of the NRC regulations imposes no such requirement.

Basis (13) for Contention I(A) is not an appropriate basis for a contention in that it alleges that "bases or criteria" for the choice of protective actions during an emergency are required by 10 CFR § 50.47(b)(10). In fact, the cited section of the NRC regulations requires only the development of "guidelines" for such protective actions. The second sentence of this basis, alleging that evacuation time estimates are inadequate, is too broad and non-specific to form the basis for a valid contention. The third sentence of this basis, relating to thyroid protection, is inappropriate because it alleges that there is some requirement that adequate protection be demonstrated, whereas the cited NRC regulation poses no such requirement. Furthermore, an allegation about adequate thyroid protection may only be made

in connection with a postulated radiological accident which would require such protection, and this basis does not postulate accident scenarios requiring thyroid protection in a manner consistent with the requirements of footnote 5 of the September 18 order. The sentence in this basis alleging inadequacies in the "range of protective actions" is inappropriate because it is an attack upon NRC regulations. This basis also claims that neither the effectiveness of protective actions nor the adequacy of sheltering has been demonstrated, whereas no such demonstration is required by the cited provision of the NRC regulations. As to the effectiveness of protective actions as referred to in this basis, the assertions are not site-specific, but rather allege conditions which, even if correct, would be equally applicable to all nuclear reactor sites. They accordingly do not constitute an acceptable basis for a contention in this proceeding.

Basis (14) for Contention I(A) is not a proper basis for a contention in that it asserts that 10 CFR § 50.47(b)(11) requires "methods for permanent record-keeping of emergency response personnel radiation exposures," whereas the cited provision of the NRC regulations imposes no such requirement. The second sentence of this basis asserts that there has been no "demonstration" of the adequacy of decontamination facilities, whereas no such demonstration is required by the cited regulation, and indeed, the decontamination facilities themselves are not required by the cited regulation.

Furthermore, all of the claims of inadequate decontamination facilities and equipment presume certain postulated accident scenarios for which the facilities would be inadequate. This is not the proper basis for contention in that it presumes certain consequences of postulated serious accidents at Indian Point without meeting the requirements of footnote 5 of the September 18 order. Contentions may only postulate inadequate protective actions based upon assumptions made about accident conditions which must be advanced as required by footnote 5. This basis also alleges a lack of demonstration of sufficient means for radiological monitoring of evacuees, whereas the cited NRC regulation refers only to radiological exposure for emergency workers.

Basis (15) for Contention I(A), relating to adequate medical facilities and transportation to such facilities, is not an acceptable basis for a contention in that it presumes the consequences of certain postulated accidents at Indian Point without meeting the requirements of footnote 5 of the September 18 order. Medical facilities may be inadequate, or transportation to such facilities may be inadequate, based only upon assumptions made about certain postulated accidents; however, such accidents and resultant conditions requiring medical treatment are not advanced in accordance with the requirements of footnote 5. Similarly, the assertions that transportation to medical facilities may be required in the course of an evacuation also presumes

certain postulated accident scenarios without meeting the requirements of footnote 5.

Basis (16) for Contention I(A) is not an appropriate basis for a contention in that it asserts that "a method for periodically estimating the total population exposure is not set forth in the plan," whereas 10 CFR § 50.47(b)(13) does not impose such a requirement. The sentence of this basis alleging that recovery plans and procedures are insufficiently detailed is itself too vague and imprecise to form the basis for a proper contention. Nor does the cited NRC regulation require objective criteria regarding the return of the general public to areas in the plume EPZ after a postulated accident. Only "general plans" are required by the cited regulation.

Basis (17) for Contention I(A), relating to drills and exercises, does not form an appropriate basis for a contention because there is no claim that the plan description of drills and exercises for Indian Point are any different or less detailed than the drills and exercises specified in plans for other nuclear power plants. This is particularly so since FEMA and NRC staff review and approve all drill scenarios. This basis in effect alleges that all radiological emergency planning drills will be ineffectual as a test of actual emergency response capability. This constitutes an attack upon NRC emergency planning regulations and is therefore impermissible as the basis for a contention.

This basis is also inappropriate in that it is not site-specific.

Basis (18) for Contention I(A) is inappropriate as a basis for a contention in that it suggests that there must be a "demonstration" of the adequacy of emergency response personnel training, whereas no such demonstration is required by 10 CFR § 50.47(b)(15). "Accountability programs" are not required by the cited regulation. The sentence alleging that most of the necessary training has not yet taken place at Indian Point would form the basis for a proper contention if set forth with greater specificity as to alleged training deficiencies.

Basis (19) for Contention I(A) would form the proper basis for a contention insofar as it alleges that there are no provisions for updating public information programs or evacuation time estimates. The latter portion of the basis which questions the use of "actual conditions" versus "idealized conditions" relating to evacuation time estimates is too generalized and imprecise to form the proper basis for contention. The last sentence in this basis stating that there is no assurance that an adequate level of preparedness will be maintained for the life of the Indian Point units is much too vague and generalized to form the basis for an acceptable contention.

Contention I(B)(1):

Emergency planning for Indian Point Units 2 and 3

is inadequate to protect the public health and safety because existing plans do not provide reasonable assurance that adequate protective measures can and will be taken in the event of a radiological emergency, as is required by 10 CFR 50.47 (a), in that:

- (1) The plans are based on unproved assumptions of human response during radiological emergencies.

Bases for Contention I(B)(1):

- (1) The "public" in the plume EPZ consists of hundreds of thousands of people who have different needs, situations, capabilities, and debilities. These factors have not adequately been taken into account in the development of the emergency plans for Indian Point Units 2 and 3.

- (2) Human response to hazards which involve the threat of contamination has been repeatedly shown to be qualitatively different from response to hazards in which the extent of the danger is more immediately determined by human senses, and this has not been given adequate consideration in the formulation of the Indian Point emergency plans; See, Prepared Testimony of Kai T. Erickson, Metropolitan Edison Company (Three Mile Island Nuclear Station, Unit No. 1), Docket No. 50-289 (RESTART).

- (3) It is an unproved assumption that people will respond to radiological threats in the same way as people generally respond to other non-contamination hazards like fires and floods.

- (4) It is an unproved assumption that family members will willingly evacuate or take other protective actions when separated without communications from other family members, or will willingly allow schools, hospitals, nursing homes or other institutions to assume care for children, invalids, or other family members, especially when the location, destination, or safety of the family members is not known (See, Erickson, op. cit.).

- (5) It is an unproved assumption that when public information pamphlets are finally distributed, that they will be read, understood, remembered, and kept in a location for easy access during emergencies, or that the information will be at all assimilated by those persons who do not speak or read English, by the blind, or by the learning-impaired.

(6) It is an unreliable assumption that the deaf, will be able to promptly and adequately understand mass media protective action messages during a radiological emergency at Indian Point Units 2 and 3.

(7) The evacuation from the area around the Three Mile Island Unit 2 reactor which began on March 28, 1979, demonstrated that more than fifty times as many persons responded to advisories to evacuate as were requested to (approximately 144,000 persons actually evacuated, rather than the 2,500 for which evacuation was recommended), that persons evacuated to an average distance of approximately 100 miles (which far exceeds any other evacuation in U.S. history from natural hazards), and that persons evacuating the area displayed a strong tendency to choose "upwind" destinations (See, Donald J. Ziegler, et al., "Evacuation from a Nuclear Technological Disaster," Geographical Review, Vol. 71, No. 1, January 1981, pages 7-9). There was no confirmation that the persons who were advised during that accident to shelter in fact did so; indeed, a very large proportion of those who were advised to shelter evacuated instead (sheltering was recommended for all persons within 10 miles who were not in the recommended evacuation categories of pregnant women and young children, but nearly half of the population within 10 miles chose to evacuate instead; See, Ziegler, et. al., op. cit. page 7). None of these factors has been adequately considered in the emergency plans for Indian Point Units 2 and 3.

(8) Both the emergency plans themselves and the evacuation time estimate studies performed by CONSAD and Parsons Brinckerhoff fail to account for the "evacuation-shadow phenomenon". This phenomenon involves the tendency of an official evacuation advisory to cause departure of citizens from a much larger area than was officially intended. Although this may be a minor consideration for natural hazards emergency planning, it may be a major consideration for nuclear power plant accidents due to the lack of geographic delineation of radiation hazards (See, Ziegler, et al., op. cit., page 7; See, also, Stanley D. Bruno, et al., Final Report on a Social Survey of Three Mile Island Area Residents Department of Geography, Michigan State University, August 1979, pages 14-15, 29, and 47).

Con Edison's Response to Contention I(B)(1):

This contention, complaining of "unproved assumptions of human response during a radiological emergency," is not an appropriate contention because:(1) it is too generalized and non-specific;

(2) it is not site-specific; and (3) it is an attack upon NRC emergency planning regulations. Neither Contention I(B)(1) nor its bases asserts that human response during radiological emergencies would differ materially at Indian Point from the response of persons during the course of a radiological accident at any other nuclear power plant. This contention also impermissibly attacks NRC emergency planning regulations for their presumed failure to anticipate certain postulated human behavioral responses which it is claimed would also occur during any nuclear power plant accident.

Basis (1) for Contention I(B)(1) is too general to provide the proper basis for a contention in that it posits a failure to anticipate and accommodate "different needs, situations, capabilities, and debilities" with the plume EPZ. This would cover a myriad of circumstances and would not be capable of effective consideration by the Licensing Board.

The second, third, and fourth bases for Contention I(B)(1) are not proper bases for a contention in that they allege a generic, qualitative difference between radiological emergencies and other types of public emergencies requiring evacuation. These bases are not site-specific, and constitute a claim that NRC emergency planning is generally deficient. If the Indian Point emergency plan inadequately anticipates human behavioral patterns (which behavior is not alleged to be

different at Indian Point than elsewhere), then all nuclear emergencies plans would similarly be inadequate.

Bases (5) and (6) for Contention I(B)(1) are not proper bases for a contention in that they allege inadequacies in the NRC's emergency planning public information regulations. These bases are not site-specific, and are therefore impermissible, in that there is no assertion that public information pamphlets will be ignored to a greater extent at Indian Point than at any other site, or that handicapped or non-English speaking persons are any more numerous at Indian Point than at any other site.

Bases (7) and (8) for Contention I(B)(1), relating to self-evacuation, are not proper bases for a contention because they are not site-specific. There is no assertion that the postulated self-evacuation phenomena would be any more substantial, or differ in any material way, from such a phenomena that might be experienced at any other nuclear power plant site. This basis is in substance an attack upon the NRC for failing to anticipate and accommodate a postulated self-evacuation phenomena. The lack of Indian Point site-specific characteristics in this basis is emphasized by the fact that the basis itself relies upon experiences asserted to have occurred at another site, and by stating candidly that self-evacuation "may be a major consideration for nuclear accidents."

Contention I(B)(2):

The time estimates for evacuation, which will be utilized to determine the feasibility of evacuation itself and the selection of appropriate protective actions, are based on the CONSAD Research Corporation and/or the Parsons, Brinckerhoff, Quade, Douglas, Inc., evacuation time estimate studies. These studies and the resulting evacuation time estimates are unreliable because they are based on unproved assumptions of human response during nuclear emergencies, and do not take into account the actual or planned preparedness levels of the State and Local response organizations. In addition, the methodology utilized to perform these evacuation time estimates has not been verified experimentally and therefore the validity of the methodologies used in these studies is not known. Further, these studies are based on planning assumptions which differ from those actually used in the emergency plans.

Bases for Contention I(B)(2):

(1) The studies assume that all people waiting in cars in traffic will behave cooperatively. The time estimates do not allow any margin for time delays caused by non-cooperative behavior in such situations.

(2) The studies assume that people will take the appropriate "direct" route out of the area and will not make "extra" trips in other directions for personal reasons (such as making withdrawals from banks and savings institutions, going to schools to pick up children, going home from work before evacuating, or going to work locations before evacuating). It has not been demonstrated that such "extra" trips within the affected area will not be made, and the TMI-2 accident experience in fact demonstrated just the opposite.

(3) The studies assume that traffic flow outside the affected area (in the case of an evacuation of less than the plume EPZ) or outside the plume EPZ (in the case of a total evacuation of the plume EPZ) will not impede the flow of traffic exiting the evacuating sectors. This assumption has not been demonstrated to be valid and the TMI-2 experience contradicts this assumption (See, Ziegler, et al., op. cit., page 7; and Brunn, et al. op. cit., pages 14-15, 29, and 47). Indeed, there are accidents (generally classified as PWR "atmospheric" accidents, in which the containment fails following or concurrent with core meltdown) in which the Protective Action Guidelines (PAG's) can be exceeded far beyond the present plume exposure EPZ (given a PWR atmospheric

accident, there is a 10% "conditional" probability that the whole body PAG of 1 Rem will be exceeded at 200 miles, a 10% probability that the 5-Rem whole body PAG will be exceeded at over 100 miles, and a 50% probability that the 5-Rem whole body PAG will be exceeded about 50 miles; See, NUREG-0396, November 1978, Figure I-16, page I-47). Thus, there is a substantial probability that given the very accident which requires the most expeditious evacuation of the plume EPZ, persons outside the recommended EPZ will self-evacuate or be advised to evacuate.

(4) The studies fail to adequately account for accidents with such large releases that traffic control officers would be subject to large personal exposure to radiation or to provide for the contingency that no personnel will be able to stand in the open and direct traffic due to high radiation dose rates. In addition, it has not been demonstrated that there are sufficient numbers of trained traffic control personnel available to effect the degree of traffic control upon which the studies rely.

(5) The studies assume different procedures for the evacuation of school children than the plans themselves call for.

(6) The studies have not taken adequate account of the special transportation needs of the handicapped and invalids, and the effect on the overall evacuation time that these special transportation problems will have.

(7) There are no provisions in the studies nor in the emergency plans for updating the evacuation time studies annually to reflect changes in population, roadway network characteristics, and changes to the plans.

(8) The time estimate studies are inadequate in that they do not adequately address local meteorological and climatological conditions which occur in the Indian Point area, particularly in terms of the impact of adverse weather conditions on the ability to perform evacuations.

Con Edison's Response to Contention I(B)(2):

This contention, insofar as it related to "unproved assumptions of human responses during nuclear emergencies," is not an appropriate contention in that it is an attack upon NRC's emergency planning regulations, and is not site-specific.

There is no assertion that "human response" would be any different at Indian Point than at any other nuclear power plant site. The assertion that the Indian Point emergency plan does not "take into account the actual or planned preparedness levels of the state and local response organizations" might form the basis for an appropriate contention; however, in its present form it is too vague and generalized in that it is not specified what has allegedly not been taken into account. The balance of this contention, asserting that the Indian Point evacuation time estimates employ unverified methodology, and are based on planning assumptions different from those actually used in the emergency plans, would form the basis for a proper contention if asserted with greater particularity and specificity as to the deficiencies asserted.

Bases (1) and (2) for Contention I(B)(2) are proper bases for a contention relating specifically to the Indian Point evacuation time estimates.

Basis (3) for Contention I(B)(2) would form the proper basis for a contention relating specifically to the impacts of postulated traffic flow outside of an evacuating sector upon the Indian Point evacuation time estimates if the claimed shortcomings in the present time estimates due to this factor were set forth, and the traffic flow factor described. However, this portion of the basis is too vague and generalized in its present form. The remainder of this basis, postulating

certain types of accidents, is not an appropriate basis for a contention because it presumes certain unspecified accident scenarios without complying with the requirements of footnote 5 of the Commission's September 18 order.

Basis (4) for Contention I(B)(2) is similarly inappropriate in that it postulates certain accident scenarios without complying with footnote 5. The last sentence of this basis, relating to a sufficient number of traffic control personnel upon which the Indian Point evacuation time estimates rely, would form the proper basis for a contention if it enumerated the locations at which it is claimed adequate traffic control was erroneously presumed.

Basis (5) for Contention I(B)(2) would form the proper basis for a contention if the alleged "different procedures" referred to were specified with reasonable specificity. However, in its present form, the supposed defects in the assumptions used in preparing evacuation time estimates for school children are not set forth, hence this is not an appropriate basis for a contention.

Basis (6) for Contention I(B)(2) is not an appropriate basis for a contention because the manner in which transportation requirements for the handicapped were allegedly overlooked, and the claimed impacts of these factors upon the evacuation time estimates referred to, are not set forth with reasonable specificity and do not contain a statement of factual bases relied upon.

Basis (7) for Contention I(B)(2) is not an appropriate contention because there is no Commission regulatory requirement that evacuation plans specify the manner in which they will be modified in future periods. The Commission's questions in this proceeding do not inquire into plant or emergency plan status at future annual anniversaries.

Basis (8) for Contention I(B)(2) is not an appropriate basis for a contention because the manner in which "local meteorological and climatological conditions" are said to have been inadequately addressed, and the claimed impact of such factors upon the evacuation time estimates referred to, are not set forth with reasonable specificity and a statement of the factual bases relied upon.

Contention I(B)(3):

The emergency plans and proposed protective actions do not adequately take into account the full range of accident scenarios and meteorological conditions for Indian Point Units 2 and 3.

Bases for Contention I(B)(3):

(1) Sheltering has been demonstrated to be useful for no more than a two-hour period in terms of protecting the public from inhalation doses [See, Testimony of Margaret A. Reilly, Department of Environmental Resources, Commonwealth of Pennsylvania, under cross-examination, transcript page 18,539, In the Matter of METROPOLITAN EDISON COMPANY (Three Mile Island Nuclear Station, Unit No. 1), RESTART]. The minimum time in which evacuation could be effectuated is greater than this time period, much greater in many circumstances. The protective actions developed for persons at risk from the Indian Point reactors are limited to sheltering and evacuation. Therefore, there are accident scenarios (in combination with meteorological conditions common to the Indian Point area) for which there are no adequate protective

actions to protect the public health and safety.

(2) The emergency plans and protective actions do not adequately address the special circumstance of precipitation occurring at the time of a release of radioactivity from Indian Point during an accident. Such precipitation would "scavenge" radioiodines and radio-particulates from the plume very efficiently (See, WASH-1400, Appendix VI, "Calculations of Reactor Accident Consequences," Section 6 and Appendix B), resulting in very different conditions than would pertain to a case involving only dry deposition. These conditions have not been adequately addressed in the plans nor by the proposed protective action alternatives.

(3) The emergency plans and proposed protective action alternatives fail to adequately address the nature of the river valley and mountain system in the Indian Point area. The geography and geomorphology of the Indian Point area is such that the Indian Point site is situated in a "bowl", surrounded on nearly all sides by high ground ranging from 600 to 1000 feet high; such topography has a decisive influence on the meteorology of the area, and, therefore, on considerations of accident consequences from Indian Point Units 2 and 3 (See, Technical Report #372.1, B. Davidson, op. cit., pages Q-5 to Q-6).

(4) The emergency plans and proposed protective action alternatives fail to adequately address the conditions which would prevail during inversions or other adverse meteorology (such as prevailed during the early hours of the TMI-2 accident). Inversion conditions in the Indian Point area may be more common than expected due to the geographical and geomorphological conditions of the site area.

(5) The emergency plans and proposed protective action alternatives fail to adequately address the impact of snow and/or icing upon the ability of emergency response organizations and the general public to effectuate evacuation as a protective action.

Con Edison's Response to Contention I(B)(3):

This contention, insofar as it relies upon "the full range of accident scenarios . . . for Indian Point units 2 and 3," is not an appropriate contention in that it does not comply with the requirements of footnote 5 of the Commission's September 18 order. The balance of the contention, relating to a failure to anticipate meteorological conditions at Indian Point, is too vague and non-specific to be a proper contention, inasmuch as neither the meteorological conditions said to have been overlooked nor the impacts upon the emergency plans due to these factors are set forth.

The first basis for contention I(B)(3) is not an appropriate basis for a contention in that it presumes certain postulated accident scenarios for which sheltering is claimed to be inadequate without complying with the requirements of footnote 5 of the Commission's September 18 Order. There is also nothing sitespecific about "inhalation doses" or the effectiveness of sheltering.

Basis (2) for Contention I(B)(3) is not an appropriate basis for a contention in that it postulates certain accident scenarios occurring during a period of rainfall without complying with the requirements of footnote 5. This basis is also inappropriate inasmuch as the asserted

interaction of radiation releases with rainfall is not set forth with any specificity, nor is this phenomena asserted to be different at Indian Point than at any other site. Therefore, the basis is not site-specific.

Bases (2) and (4) for Contention I(B)(3), relating to the geography, geomorphology and meteorology of the Indian Point site, are not appropriate bases for a contention, absent compliance with the requirements of footnote 5 of the Commission's September 18th Order. These bases also fail to set forth the conditions relied upon, or their impact upon emergency planning, with any reasonable specificity.

Basis (5) for Contention I(B)(3) would form the basis for a proper contention if the particular adverse impacts of the snow and ice conditions referred to on emergency response capability, and the factual grounds therefor, were set forth with greater particularity.

#### Contention I(B)(4):

The proposed protective actions that might be taken in the event of an accident at Indian Point Units 2 and 3 are not sufficiently integrated to assure that the proper action or mix of actions is taken under particular accident conditions and there are inadequate criteria in the plans for determining which actions should be taken.

#### Bases for Contention I(B)(4):

- (1) The plans fail to contain adequate criteria for use in determining which protective actions are appropriate in different accident conditions.
- (2) The plans fail to address the point at which the

relative merits of sheltering are outweighed by the relative merits of evacuation and the basis for determining this transition point.

- (3) The plans fail to contain adequate protective actions for accident scenarios and meteorological conditions that will require thyroid prophylaxis and/or respiratory protection against radioiodines and/or radio-particulates.
- (4) The plans fail to consider the doses received by persons crossing radioactive plumes from Indian Point in following evacuation directions which may be inappropriate for the particular accident scenario, in making "extra" trips (to join with family members, to go to the bank, or to obtain fuel), or in taking an alternative evacuation route which evacuees may choose on their own.

Con Edison's Response to Contention I(B)(4):

This contention, complaining of "inadequate criteria" and "[in]sufficiently integrated" emergency response plans is too vague and nonspecific to be a proper contention.

The first basis for Contention I(B)(4) is merely a restatement of Contention I(B)(4) itself and suffers from its defects.

The second basis for Contention I(B)(4) would form the basis for a proper contention insofar as it relies on the provisions of the emergency plan addressing the decisional choice between sheltering and evacuation. However, if that portion of the basis relating to a "transition point" relates to considerations of the health effects of radiation, then it is not an appropriate basis for a contention because it is not site-specific. There is no assertion that individuals

living in the vicinity of Indian Point are either more or less susceptible to the effects of radiation than individuals elsewhere.

The third basis for Contention I(B)(4), asserting inadequate protective actions for certain scenarios requiring thyroid prophylaxis and/or respiratory protection, is not an appropriate basis for a contention in that it necessarily presumes a probability of occurrence and severity of certain types of radiological accidents without complying with the requirements of footnote 5 of the Commission's September 18 order. The presentation postulated accident scenarios requiring the protective actions referred to in this basis must satisfy the requirements of footnote 5 in order to be admissible in this proceeding.

The fourth basis for Contention I(B)(4) is not an appropriate basis for a contention in that it postulates dosages which would be received by certain persons in "particular accident scenario[s]" without complying with the requirements of footnote 5.

Contention I(B)(5):

The accident consequences that would be suffered by the public in the area of the Indian Point reactors before any protective actions could be or would be implemented in the event of a radiological accident at Indian Point Units 2 and 3 are unacceptable for some accidents (including accidents which exceed the design basis for the Indian Point units). Even if heroic emergency measures are implemented

in accordance with the abilities, training, equipment, and degree of preparedness of the State and Local emergency response organizations, the health consequences to the public from such accidents will include prompt fatalities, early fatalities, early and latent illnesses, fatal and non-fatal cancers, thyroid nodules, and genetic defects.

Bases for Contention I(B)(5):

- (1) In order for a protective action to be implemented, several key steps must occur in sequence. First, the accident sequence must manifest itself in some form which is recognized by the plant operators. Second, plant operators must promptly and correctly take note of the accident manifestation (such as a control room alarm) and also assess the particular malfunction based upon the symptoms available. Third, the operators must notify offsite emergency response authorities. Fourth, the offsite emergency response authorities must determine which, if any, protective action to implement. Fifth, the public must be notified of the emergency and what actions are required as a result of the accident. Sixth, the emergency response organizations and the public must implement the correct protective action. Delay in any of these steps will increase both the likelihood that adverse consequences will not be avoided and the magnitude of those consequences.
- (2) It has not been established, in contradiction to 10 CFR 50.47(b)(4), that appropriate "emergency action levels" (EAL's) have been established which will allow prompt recognition of the range of possible accidents at Indian Point Units 2 and 3 (including those accidents which exceed the design basis for the Indian Point Units 2 and 3 reactors). No basis has been provided by the licensees to demonstrate that their sets of EAL's are comprehensive, and that the EAL's are announced clearly to the plant operators. Thus, there is not adequate assurance that accidents will be promptly recognized by plant operators, and that once it is recognized that an accident is in progress, that plant operators will correctly diagnose such accidents in order to recommend the appropriate protective action(s).

- (3) The emergency plans are in part based on the detection of radioactivity in monitored release pathways. This precludes or limits knowledge of releases from unmonitored release pathways; such release pathways; such releases were a complicating factor during the TMI-2 accidents during which releases were occurring from portions of the plant not normally containing radioactivity, but which contained such radioactivity due to the accident. Lack of knowledge about releases of radioactivity from unmonitored leakage pathways could lead to an improper or inadequate protective action decision being made on an inadequate or incomplete data base.
- (4) The licensees have not demonstrated compliance with Regulatory Guide 1.97, Revision 2, thus compromising their ability to adequately monitor the course of accidents at Indian Point Units 2 and 3.

Con Edison's Response to Contention I(B)(5):

This contention is inappropriate in its entirety because it postulates "unacceptable" consequences for "some accidents" at the Indian Point site without complying with the requirements of footnote 5 of the Commission's September 18 Order. There is also nothing site-specific about this contention, there being no assertion that individuals living in the proximity of Indian Point would be any more affected by a postulated radiological accident than would individuals who would be affected by a postulated accident at another nuclear power plant site. There is also nothing site-specific about the "health consequences" referred to in this contention.

The first basis for Contention I(B)(5) is not a proper basis for a contention. It merely suggests that there are various stages in the progression of the responses to a

postulated radiological emergency at which delay can occur, and goes on to assert that delays at any of these steps will increase the likelihood and magnitude of consequences. This basis thus presumes that time to respond to an impending postulated radiological accident may be short. This implicit assumption can only be correct depending upon the assumptions made about the various accident scenarios which are postulated. However, this basis does not comply with the requirements of footnote 5 of the Commission's September 18 Order in presuming such scenarios. Furthermore, there is nothing site-specific about this basis. Delay in the effectuation of an emergency planning step at Indian Point is not claimed to have any differing impact than a similar delay at any other nuclear power plant. Claims of delay as raised by this basis are too vague and generalized to form the basis for a proper contention.

Basis (2) for Contention I(B)(5) is not an appropriate basis for a contention in that it presumes that the licensees have an obligation to "demonstrate" the adequacy of their emergency action levels, whereas no such burden is imposed upon licensees by the provision of the regulations relied upon, 10 CFR § 50.47(b)(4). The balance of this basis asserts that events initiating radiological accidents may not be promptly or correctly diagnosed by plant personnel. This portion of this basis does not comply with the requirements of footnote 5. Moreover, the entire basis is not sufficiently specific to support a contention.

Basis (3) for Contention I(B)(5), complaining of unmonitored radiation release pathways and relying upon the Three Mile Island accident as precedent, is not an appropriate basis for a contention in that it does not meet the requirements of footnote 5 of the Commission's September 18 Order. This basis is also not site-specific, inasmuch as there is no assertion that the risks of unmonitored pathway releases are greater at Indian Point than at any other nuclear power plant.

Basis (4) for Contention I(B)(5) is not the proper basis for a contention in that it implies that compliance with an NRC Regulatory Guide is required by NRC regulations, or that the absence of compliance with an NRC Regulatory Guide creates an unsafe condition. This basis is also too nonspecific and general to form the proper basis for a contention, in that the elements of alleged noncompliance are not set forth. This basis erroneously and improperly asserts that licensees have an obligation to "demonstrate" such compliance.

Contention I(B)(6):

There is no objective basis for judging the adequacy of emergency planning for the Indian Point area in the absence of an established maximum acceptable level of radiation exposure for the general public as a consequence of reactor accidents.

Bases for Contention I(B)(6):

- (1) The public radiation dose guidelines in 10 CFR Part 20 are inapplicable to abnormal operations and accident conditions.

- (2) The exposure levels in 10 CFR Part 100 are not meant to indicate acceptable levels of exposure, but are rather design guidance against which the adequacy of siting and plant engineered safety features are assessed in the design review process used by the NRC Staff. These exposure levels are inapplicable to actual accident conditions, and are not meant to constitute acceptable dose limits for the general public under accident conditions (See, NUREG-0396, op. cit., page III-9).
- (3) The Protective Action Guides (EPA-520/1-75-001, "Manual of Protective Action Guides and Protective Actions for Nuclear Incidents," U.S. Environmental Protection Agency, September 1975) are not acceptable dose levels, but rather "trigger levels" for emergency planning decision-making (See, NUREG-0396, op. cit., page 4).
- (4) There are no established criteria which can be utilized to judge the adequacy of emergency planning which are objective in nature, i.e., no maximum acceptable evacuation time, no maximum acceptable radiation dose levels, etc.

Con Edison's Response to Contention I(B)(6):

Contention I(B)(6), which contests the absence of established radiation doses for the general public, is not a proper contention because: (1) it comprises an attack upon NRC regulations, or more precisely, the absence of NRC regulations on a specific subject; (2) it is not site-specific, there being no assertion that the supposed absence of radiation exposure levels is more of a problem at Indian Point than elsewhere; and (3) it presumes certain levels of radiation exposure resulting from postulated accident scenarios without complying with the requirements of footnote 5 of the Commission's September 18 Order.

All four of the bases for Contention I(B)(6) refer to radiation exposure quantifications set forth in NRC publications, and complain that the various exposure levels are inappropriate for emergency planning purposes. The various bases thus set forth the numerical radiation exposures claimed to be inadequate, but do not set forth any factual bases supporting the claimed inadequacy. The various bases are thus inappropriate as support for the contention. The last basis for this contention, asserting that "there are no established criteria which can be utilized to judge the adequacy of emergency planning," is too vague and nonspecific to form the basis for a proper contention.

Contention I(B)(7):

The NRC's attitude toward emergency planning, as it stands on its own and as it is reflected in the emergency planning attitudes of the licensees, their contractors, and Local and State emergency response officials, has caused and continues to cause a failure to perform emergency planning for accidents which are held by the NRC to be "not credible." In order for effective emergency plans to be created, NRC must promote an awareness that nuclear power plant accidents with substantial offsite consequences are possible for Indian Point Units 2 and 3 and must be planned for.

Bases for Contention I(B)(7):

- (1) Finding by the NRC's Special Inquiry Group that the principal finding related to emergency planning is that the root cause of most of the inadequacies in governmental emergency response to the TMI-2 accident, and a contributory cause of all of the inadequacies, was the NRC's failure to promote an awareness that nuclear power plant accidents with substantial offsite consequences are possible and must be planned for (See, NUREG/CR-1250, Volume II, Part 3, pages I046-47).

- (2) An early draft of the TMI Action Plan (NUREG-0660) contained a chapter dealing with the attitude problem cited by the Kemeny Commission as its major conclusion, but later versions, including the final NUREG-0660 version, deleted this chapter without explanation.
- (3) Although the Commission concluded in adopting new emergency planning regulations that "onsite and offsite emergency preparedness as well as proper siting and engineered design features are needed to protect the health and safety of the public" [See, 45 F.R. 55402, 55402, August 18, 1980], the degree of change of practice has not been great. Emergency planning requirements are not pursued with the same degree of effort as plant hardware requirements. The same or similar standards are not applied to hardware, i.e., none of the emergency planning-related hardware is required to meet safety-grade standards (for instance, alert sirens need not have redundant power sources and are not required to be environmentally qualified), nor are emergency planning-related hardware and procedures subjected to the quality control requirements as opposed to the manner in which plant engineered safety features hardware are handled. Emergency planning is not, in practice, viewed by the NRC Staff to be as important in protecting the public as siting and plant design.

Con Edison's Response to Contention I(B)(7):

This contention, complaining of "the NRC's attitude toward emergency planning," and asserting that "NRC must promote an awareness that nuclear power plant accidents with substantial off-site consequences are possible," is not an appropriate contention because: (1) it is an obvious attack upon the NRC, its personnel and its regulations; (2) it is too generalized and nonspecific; (3) it is not site-specific; and (4) it presumes an obligation on the part of the NRC and licensees to "promote an awareness" of certain types of postulated accidents without

complying with the requirements of footnote 5 of the Commission's September 18 Order requiring persons proposing such a contention to, inter alia, take into account specific site and specific plant features, and to discuss the possibility of postulated releases for the specific Indian Point plants.

The first two bases for Contention I(B)(7) rely upon various proposals that the NRC promote a public awareness of nuclear power plant accidents as referred to in the contention itself, and thus suffer from the same defects as Contention I(B)(7).

Basis (3) for Contention I(B)(7) asserts generally that the NRC has been insufficiently aggressive in promulgating new emergency planning regulations since the Three Mile Island incident, and that "emergency planning requirements are not pursued with the same degree of effort as plant hardware requirements." This basis constitutes an attack upon NRC regulatory philosophy and regulatory requirements, and is thus not a proper basis for a contention.

Contention II(A):

The consequences of a severe radiological accident at Indian Point Units 2 and 3 would involve massive damage to the public health and safety beyond the current plume EPZ, so that effective emergency planning is required for that area in order to protect the public health and safety beyond the current plume EPZ.

Bases for Contention II(A):

- (1) Releases of radioactivity from Indian Point Units 2 and 3 during a radiological accident

would contain large quantities of radioiodines and radio-particulates in many accident scenarios [See, WASH-1400, Appendix VI, "Calculations of Reactor Accident Consequences," October 1975, Table VI 2-1 (page 2-5), and Table VI 3-1 (page 3-3)].

- (2) Such radioiodines and radio-particulates are efficiently scavenged from a plume by precipitation (including rain and snow) [See, WASH-1400, op. cit., Appendix B].
- (3) Precipitation occurring at some time following release and at some distance from the release point could cause scavenging of significant amounts of radioiodines and radioparticulates at distances much farther from the plant than the extent of the current plume EPZ, including the metropolitan New York City area.
- (4) Even ignoring the scavenging effect and precluding precipitation, consequences from a PWR "atmospheric" accident such as is described in the Reactor Safety Study (WASH-1400) could result in doses exceeding the PAG's at considerable distances from the Indian Point site (see pages 20-21, supra).
- (5) Doses in such situations would be sufficiently high to require prompt protective action in order to adequately protect public health and safety.
- (6) Given the extremely high population density in the New York City metropolitan area, it would be impossible to timely implement appropriate protective measures given the circumstances described above.
- (7) No plans exist beyond the plume EPZ except for control of agricultural products and drinking water supplies, and these measures are inadequate to protect the public health and safety in circumstances such as described above.

Con Edison's Response to Contention II(A):

This contention, asserting that the plume Emergency Planning Zone mandated by NRC regulations is inadequate, is not

an appropriate contention because: (1) it is an attack upon current NRC regulations; (2) it is not site-specific, in that there is no assertion that radiation levels at the outer edge of the plume EPZ in the event of a postulated accident would be any greater at Indian Point than at any other reactor site; and (3) it postulates consequences of assumed radiological accidents without complying with the requirements of footnote 5 of the Commission's September 18 Order.

All seven bases for Contention II(A) attempt to support the attack on the plume EPZ. While consequences are postulated, as with the contention itself, there is no effort made to comply with footnote 5 of the Commission's September 18 Order or to otherwise discuss the probability of occurrence, site, and plant-specific features as required by that footnote. Thus, none of the bases for Contention II(A) may form the basis for an acceptable contention.

Contention II(B):

Local emergency response needs and capabilities as they are affected by such conditions as demography, topography, land characteristics, jurisdictional boundaries, and particularly access routes and the proximity of the metropolitan New York City area require substantially greater emergency planning beyond the present plume EPZ than currently exists or is contemplated.

Bases for Contention II(B):

- (1) The roadway network is strongly oriented in a roughly North/ South direction, thus limiting the direction of evacuation for the majority of potential evacuees.

- (2) Population density and absolute numbers increase dramatically in the direction of the New York City metropolitan area.
- (3) The direction of the roadway network and the direction of increased population density and absolute numbers of population are in the direction toward which winds frequently blow in the Indian Point area, thus strongly influencing the course of events in an evacuation.
- (4) Consequences from accidents at Indian Point would be manifested at distances considerably farther from the site than the extent of the current plume EPZ (See, pages 20-21, supra).
- (5) There is no basis for assuming that the New York City metropolitan area would permit the influx of large numbers of potentially or actually irradiated and/or contaminated persons evacuating from the Indian Point area.
- (6) The topography of the Indian Point area (mountains and river valley geomorphology) will strongly influence emergency planning needs; this has not been adequately addressed in the present plans. (See, pages 11-12, supra).
- (7) The extent of affected areas and the population contained in those areas (as well as the numbers of facilities and special populations) increase dramatically with distance from Indian Point, thus necessitating detailed, advance emergency preparedness planning in order to provide adequate assurance of prompt protection of the public health and safety.

Con Edison's Response to Contention II(B):

This contention, variously relying upon demography, topography, land characteristics and jurisdictional boundaries, is too broad and generalized to be a proper contention. The essence of the contention appears to be that due to a number of factors, the postulated consequences of an assumed radiological accident at Indian Point would be sufficiently substan-

tial to require emergency planning beyond the present plume EPZ. However, the assumed accident upon which the contention bases its consequences is not accompanied by the information required by footnote 5 by the Commission's September 18 Order, and thus cannot be an acceptable contention.

The first basis for Contention II(B), relating to the roadway network in the vicinity of Indian Point, could not possibly have any effect on radiation levels occurring at the edge of the current plume EPZ, and thus does not support the contention. As with the contention itself, this basis does not comply with footnote 5.

Basis (2) for Contention II(B), relating to demographic characteristics, similarly could not possibly have any effect upon the radiation levels at the edge of the current EPZ in the event of a postulated accident, and thus does not support the contention. This basis is also not accompanied by the information called for by footnote 5.

Basis (3) for Contention II(B) relies upon the presumed consequence of certain postulated accidents without complying with footnote 5, and is insufficiently specific to form the basis for an appropriate contention.

Basis (4) for Contention II(B) is not a proper basis for a contention, inasmuch as it is an attack upon the current NRC plume EPZ regulations. To the extent that this basis alleges that consequences of a postulated serious accident at Indian Point might be manifested at greater distances from the site than would be the case at other nuclear power plants, the basis is too vague to form the proper bases for a contention,

and is not accompanied by the information required by footnote 5.

Neither basis (5), (6) or (7) for Contention II(B), even if true, would form a basis for an expansion of the plume EPZ beyond present limits. Thus, none of these bases supports the proposed contention.

Contention II(C):

Emergency planning for Indian Point Units 2 and 3 is inadequate to protect the public health and safety because the existing plans within the current plume EPZ do not conform with the requirements of 10 CFR Part 50 and Appendix E to Part 50, therefore there is no basis for assuming that such plans form an adequate basis for ad hoc protective actions beyond the current plume EPZ.

Bases for Contention II(C):

- (1) Existing emergency plans fail to conform with the requirements of 10 CFR 50.47(b)(1-16), 50.54(s)(2), and Appendix E to Part 50.
- (2) Beyond the plume EPZ there are much larger numbers of persons at risk, much larger numbers of special facilities (such as schools, prisons, hospitals, nursing homes, etc.), and a much larger special population (invalids, hearing-impaired, vision-impaired, etc.) than within the present plume EPZ. There is no basis for assuming that ad hoc protective actions could be successfully implemented for the population at risk outside the present plume EPZ, especially considering that the existing plans within the plume EPZ are themselves inadequate.
- (3) Some accident scenarios (including accidents which exceed the design basis for the Indian Point units), alone or in combination with adverse meteorology (such as inversions and/or precipitation), will have adverse health consequences beyond the current plume EPZ (See, pages 20-21, supra).

Con Edison's Response to Contention II(C):

This is an inappropriate contention because: (1) it constitutes an attack on the NRC's current plume EPZ; (2) it is impermissibly vague, in that there is no explanation given as to why presumed emergency planning inadequacies within the current plume EPZ increase in any way the likelihood that further protective actions might be required beyond the current plume EPZ; and (3) it postulates consequences of radiological accidents without complying with the requirements of footnote 5 of the Commission's September 18 Order.

The various bases advanced in support of Contention II(C) all suffer from the same defects of the contention itself.

Contention III(A):

It is essential, although not necessarily sufficient, that the following emergency planning measures and protective actions be implemented or capable of being implemented within 10 miles (plume EPZ) of the Indian Point reactors in order to protect the public health and safety in the event of an accident at Indian Point Units 2 and 3. However, none of the following measures have either been implemented, are now capable of being implemented, or are planned to be implemented:

- a. Potassium iodide must be provided in an appropriate form for all residents within the plume EPZ and a sufficient supply and adequate distribution system for transients within the plume EPZ must be provided.
- b. Adequate sheltering capability must be provided to all residents and transients within the plume EPZ.
- c. License conditions must be placed on the operating licenses for Indian Point Units 2 and 3 which prohibit power operation during periods when the roadway network becomes degraded due to adverse weather conditions. Such conditions would include temperature inversions, flooding, snowfall, and icing on the roadways.
- d. License conditions must be placed on the operating licenses for Indian point Units 2 and 3 which prohibit

power operations with less than a fully operable complement of safety-grade and/or safety-related equipment.

- e. The roadway network must be made capable of being used to successfully evacuate all at-risk residents of the plume EPZ before the plume can reach them for the shortest plume arrival time.
- f. A filtered, vented containment system must be installed at Indian Point Units 2 and 3 to help prevent containment failure by over-pressurization.
- g. A "core-catcher" must be installed at Indian Point Units 2 and 3 to provide additional protective action time in the event of a "melt-through" accident in which the reactor pressure vessel is breached by molten fuel.
- h. A separate containment structure must be provided into which excess pressure from accidents and transients can be relieved without necessitating releases to the environment, thereby reducing the risk of containment failure by overpressurization.

Bases for Contention III(A):

- (1) Postassium iodide distribution for residents and transients in the plume EPZ would provide substantial protection against adverse health consequences caused by uptake of radioiodines.
- (2) It has not been demonstrated that adequate sheltering capability exists in the plume EPZ for all residents and transients at risk during an accident at Indian Point Units 2 and 3. Such capability is necessary if sheltering is to be used as a protective action alternative for these plants.
- (3) Plant operation should be prohibited during any weather conditions or combination of conditions which would impair the ability of the public to promptly evacuate the plume EPZ. Operation of the plants during such times is an unnecessary risk which is far outweighed by the benefits of prohibiting operation during these periods of time.
- (4) In view of the magnitude of the risks posed by the operation of Indian Point Units 2 and 3, plant operation should not be permitted with any safety-grade or safety-related component

in an inoperable condition. Operation during periods of time of inoperable safety-grade or safety-related equipment reduces the margin of safety for the Indian Point Units 2 and 3 reactors; due to the risks posed by accidents at these reactors, it is necessary that the margin of safety be maintained as high as is feasible. Therefore, operation during degraded modes related to the operability of safety-grade or safety-related equipment should be prohibited.

- (5) The present roadway network is incapable of supporting an evacuation in the time period provided from the initiation of an accident to the time the plume reaches persons at risk for the most limiting accident, thus the plant poses an unacceptable risk to the public health and safety which can only be remedied by the requisite improvements in the roadway network.
- (6) Filtered vented containment systems are capable of being constructed at Indian Point Units 2 and 3 to permit controlled venting of the containment buildings during accidents to prevent or mitigate overpressurization of the containments [See, UCLA-ENG-7775, December 1977, Post-Accident Filtration as a Means of Improving Containment Effectiveness, B. Gossett, et. al., UCLA School of Engineering and Applied Science, Project Director, David Okrent].
- (7) A core-catcher would contain molten core material following vessel failure, and, in so doing, would provide an increase in the amount of time available to effectuate necessary protective actions before the containment would be breached by melt-through.
- (8) Increasing the containment volume by providing a separate, large volume, leak-tight containment structure would provide for decreasing main containment pressure during accidents (See, NUREG-0850, Volume I, Preliminary Report, November 1981, page 3-99).

Con Edison's Response to Contention III(A):

This contention proposes eight additional alleged safety measures which, it is contended, should be required as a

condition of operation of Indian Point. As discussed extensively at Point III, pp. 7-10, infra, under the Commission's September 18 order, contentions containing proposals for additional safety measures are entitled to be considered by the Licensing Board if, according to the Licensing Board, admission of the contention seems likely to be important to resolving whether (a) there exists a significant risk to public health and safety, notwithstanding the Director's measures, and (b) the additional proposed measures would result in a significant reduction in that risk. This contention is inappropriate since no showing as required by the quoted provision of the Commission's Order has been made. Contention III(A) is not accompanied by any explanation as to how the eight specific safety measures proposed seem likely to be important to resolving whether there is a significant risk to public health and safety, nor is there any basis for the Licensing Board to infer that these additional proposed measures would result in a significant reduction of any risk at Indian Point. Furthermore, none of the eight alleged safety measures proposed by Contention III(A) constitute elements of appropriate contentions because footnote 5 of the Commission's September 18 Order has been ignored. The assertion that without these proposed safety measures there would be a significant risk depends upon the presumed consequences of postulated accident scenarios, however such scenarios have not been presented in accordance with the requirements of footnote 5.

Con Edison's Response to Contention III(A)(a):

Con Edison objects to this contention because the

question of whether potassium iodide should be provided is one which is generic and not site-specific in nature. In addition, this contention fails to meet the specificity requirement of 10 CFR § 2.714(b). The contention claims that potassium iodide "must" be provided in an "appropriate form" without offering any adequate statement as to why potassium iodide must be provided or what an "appropriate form" might be. The basis for this contention consists of a conclusory statement that providing potassium iodide would "provide substantial protection against adverse health effects." No attempt has been made to indicate what "substantial protection" might be. The intervenors have failed to provide an adequate basis to support the contention.

In addition, UCS-NYPIRG have failed to meet the standards of Question 4 for "other specific off-site emergency procedure." There is a failure to state a "specific" safety measure - "what is the 'appropriate form' of potassium iodide." What is meant by "sufficient supply and adequate distribution." In addition, no attempt has been made to show why adoption of this measure is "feasible." Nor has an attempt been made to offer an adequate rationale as to why the measure "should be taken to protect the public."

Con Edison's Response to Contention III(A)(b):

Absent a showing or even an attempt to show that the sheltering within Indian Point EPZ is inadequate, this item, which urges provision for "adequate sheltering", is objection-

able for a number of reasons. First, the contention is not in any way site-specific. Second, the item is stated with a complete lack of specificity and factual basis. No attempt is made to indicate what amounts to "adequate" sheltering. Acceptance of the purported "basis" for this contention -- a claim that "it has not been demonstrated that adequate sheltering is available" -- would stand the Commission's contention practice on its head and would require others to supply a basis which must be supplied by a contention's sponsors. In this case, as in the case of all offered "improvements" in emergency planning prepared by intervenors, the words of Question 4 must be remembered. In addition to these improvements which can be expected in the near future, the question asks "what specific off-site emergency procedures" are "feasible" and "should be taken". Thus, in addition to the standard requirements for contentions, the proponents of emergency planning measures must provide a specific statement of the desired measures, must show that they are feasible and must establish reasons why they should be adopted. Here, as in the case of its other contentions, NYPIRG-UCS have totally failed to meet these standards.

Con Edison's Response to Contention III(A)(c).

Con Edison objects to the admission of this contention. First, the contention lacks an adequate basis. The basis offered is simply a re-statement of the contention itself. No factual support at all is offered for the contention. Second, there has been no attempt to show that the issue raised by the contention which appears to be clearly generic in nature is,

in fact, site-specific. Third, although included among a list of emergency "planning measures and protective actions", and, thus, presumably intended to be encompassed within Question 4,\* here UCS-NYPIRG are actually proposing "one or more specific safety measures" which must meet the standards of Question 2 for admission of contentions urging the adoption of such measures, that is, there must be a showing that it is likely that both a "substantial risk" to the public exists and that this risk would be "substantially reduced"\*\* by the specific measure proposed. In addition, it must be remembered that under the amended January 8, 1981 order "risk" involves a consideration of both consequences and probabilities. UCS-NYPIRG Contention III(A)(c) fails to meet these standards, and is, rather, a simple unsupported conclusory statement which is not within the ambit of the Commission's six questions.

Con Edison's Response to Contention III(A)(d):

Con Edison objects to this contention for the following reasons:

- (1) The contention lacks sufficient specificity and, indeed, is so broadly stated that it is impossible to sensibly address. For example, licensees, staff and other parties will have to guess as to what NYPIRG-UCS mean by "less than a fully

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\* In discussing "Issue III" UCS-NYPIRG claims the "issue relates most closely to Commission Question 4 and 5 (UCS-NYPIRG Contentions at 38).

\*\* September 18, 1981 Order at 4.

operable complement" or "safety-grade and/or safety related equipment."

- (2) The contention lacks even the most rudimentary attempt of statement of establishing an adequate factual basis for a need for the called-for change. Instead, there are only conclusory statements referring to the "magnitude of risks posed by the operation of Indian point Units 2 and 3." As in the case of Contention III(A)(c), this contention is really a "specific safety measure" and not feasible "emergency planning improvement" and thus, must meet the requirements for admission of contentions under Question 2.
- (3) The contention raises issues which are not site-specific.

Con Edison's Response to Contention III(A)(e):

This contention lacks specificity, consisting as it does of a request that the "roadway network" be made "capable" of being used for evacuations. No adequate factual basis is offered for the contention. No particulars are offered as to what roads are "incapable of supporting an evacuation," nor specifics as to what this purported incapacity consists. The Board, Licensees, Staff and other parties are left to guess as to the duration of time encompassed by "time period provided from the initiation of an accident to the time the plume reaches persons at risk for the most limiting accidents."

In addition, this contention is actually a "risk" scenario which fails to meet the requirements of footnote 5 of the September 18, 1981 Order. The contention is based upon

unstated assumptions regarding the time from initiation of an accident to the time the plume would reach the population at large. Thus, the contention is based upon an unspecified accident scenario, and the requirements of footnote 5 are not met.

Con Edison's Response to Contentions III(A)(f)(g) and (h):

Each of these supposed "emergency planning measures and protective actions" is objectionable. Each involves a change in on-site equipment and thus none of these measures could be encompassed within Question 4's "specific off-site emergency procedures." Each, in fact, is a Question 2 "specific safety measures" proposal which is based upon certain unstated Question 1-type perceptions of risk. Since no attempt has been made to satisfy either the standards for Question 1 assessments of risks or the standards for Question 2 safety measures, these contentions must be rejected. In addition, these contentions lack sufficient factual bases even under standard NRC contention practice. In each case the contention simply states that a particular improvement "must" be adopted and the basis for each contention merely recites conclusory statements.

In addition, the proposed improvements are clearly generic in nature.

Contention III(B):

Under certain accident conditions, consequences within the present plume EPZ would be so severe that even heroic emergency measures would not be sufficient to protect the public health and safety from unacceptable immediate and long-term consequences, including prompt fatalities from acute radiation exposure, early and latent cancer cases and fatalities, thyroid nodules, and genetic defects. The deficiencies in the existing emergency plans within the plume EPZ are so deficient that there

are no feasible "interim" measures which can be implemented to correct these deficiencies.

Bases for Contention III(B):

- (1) The emergency plans meet none of the sixteen required standards of 10 CFR 50.47(b)(1-16).
- (2) Thus, the deficiencies are pervasive and massive.
- (3) There exist no feasible interim measures which could sufficiently correct such pervasive and massive planning deficiencies.
- (4) Under severe accident conditions, the impact of these present deficiencies would be greatly magnified in the form of large increases in consequences.

Con Edison's Response to Contention III(B):

This is not an appropriate contention because: (1) it is not site-specific, there being no assertion that the likelihood of a radiological accident causing the consequences complained of is any greater at Indian Point than at any other site; (2) it presumes consequences from postulated "accident" conditions without complying with the requirements of footnote 5 of the Commission's September 18 Order; and (3) it is too vague and nonspecific to be accepted as a contention.

The bases for Contention III(B) are not proper bases for a contention. Basis (1) is merely a restatement of Contention I(A) and suffers from its defects (see above). The remaining bases, complaining of "pervasive and massive" emergency planning deficiencies and "severe accident conditions," are not at all particularized, and ignore footnote 5 of the September 18 Order.

Contention III(C):

It is essential, although not necessarily sufficient, that the present plume EPZ be extended sufficiently to encompass the entire population which is at risk from all consequences of accidents at Indian Point Units 2 and 3, including not only prompt fatalities (upon which the present EPZ and plans are based), but also early and latent cancer causes and fatalities, thyroid nodules, and genetic defects. Further, this measure has not been implemented for Indian Point Units 2 and 3 and is not now being developed for implementation.

Basis for Contention III(C):

The present plume EPZ will only provide prior emergency planning coverage for a portion of those persons at risk for prompt fatalities. This ignores the greater bulk of the consequences from severe accidents at Indian Point Units 2 and 3 which would result in much greater numbers of fatal and non-fatal cancers, thyroid nodules, and genetic defects. As such, the present emergency plans are inadequately based to adequately protect the public health and safety from accidents at Indian Point Units 2 and 3 [See, NUREG-0396, op. cit., pages 16-17, the EPZ's are sized to provide only for reduction of early severe health effects, thus implying the acceptability of some undefined level of deaths and, in addition, other consequences from severe accidents; See, NUREG-0396, also, at page 1-34; in addition, page 1-51 notes that "atmospheric" accidents could result in significant numbers of early fatalities and injuries"].

Con Edison's Response to Contention III(C):

This is not an appropriate contention because: (1) it is not site-specific, there being no assertion that the consequences of an accident at distances beyond the plume EPZ would be any greater at Indian Point than at any other site; (2) it is an attack upon current NRC regulations which set forth generic requirements for plume EPZs at all nuclear plants; (3) it presumes consequences from postulated accidents without complying with the requirements of footnote 5 of the Commission's September 18 order; and (4) it is too vague and generalized to

form an acceptable contention.

The basis for Contention III(C) suffers from the same defects as the contention itself. Apart from the failure to comply with footnote 5, no factual basis is set forth for all of the assertions made about the effects of postulated accidents beyond the plume EPZ.

Contention III(D):

The consequences of severe accidents at the Indian Point reactors (including accidents which exceed the design basis for Indian Point Units 2 and 3) represent an unacceptable threat to the public health and safety that is not limited to the present plume EPZ, but which extends to the New York City metropolitan area and beyond. Under certain accident conditions, the consequences would be so severe that even heroic emergency measures would not be sufficient to protect the public health and safety from unacceptable immediate and long-term consequences, including prompt fatalities from acute radiation exposure, early and latent cancer cases and fatalities, thyroid nodules, and genetic defects. There are no feasible "interim" measures which can be adopted to remedy this situation.

Bases for Contention III(D):

- (1) Under certain meteorological conditions, including precipitation following a significant release of radioiodines and radio-particulates from Indian Point Units 2 and 3, the New York City metropolitan area would be subject to life-threatening levels of radiation exposure.
- (2) There are not established radiological emergency plans for this area which would adequately protect the public health and safety in such circumstances.
- (3) Given the massive emergency management problems faced in this area due to the very high population density, there are no feasible "interim" measures that could be adopted to alleviate this situation and adequately protect the public health and safety.

- (4) According to preliminary calculations performed by Dr. Jan Beyea, given the present state of emergency preparedness, a PWR-2 accident as described in WASH-1400 would result in prompt and early fatalities and injuries out to at least five miles from the site if evacuation takes 12 hours.

Con Edison's Response to Contention III(D):

Contention III(D) is virtually identical to Contention III(B), except insofar as Contention III(D) postulates accident consequences beyond the plume EPZ, in which part its assertions are the same as Contention II(A). Licensee's response to those contentions is incorporated by reference as if fully set forth here.

Bases (1) and (4) for Contention III(D) are not appropriate bases for a contention in that they are not site-specific, there being no assertion that the radiation levels in the event of a postulated accident would be any greater at Indian Point than at any other site. Bases (2) and (3) complain generally of inadequate emergency planning and are too vague and non-specific to form the basis for a contention. All four bases presume consequences of radiological accidents without complying with the requirements of footnote 5 of the Commission's September 18 order.

Contention IV(A):

The economic, environmental, safety, health, and other consequences of an accident at Indian Point units 2 and 3 are so severe, and the threat to the public health and safety so

great, that the reactors must be shut down regardless of the energy, economic, environmental, or other consequences of a preventive shutdown.

Bases for Contention IV(A):

- (1) The economic consequences of a severe accident at Indian Point Units 2 and 3 are extremely large, and far exceed the cost of building and operating the units. These costs arise from lost productivity, loss of land and other property, health-related costs (arising from fatal and non-fatal illnesses), contamination of water supplies and the consequent loss of drinking water sources, cleanup costs, and the loss of scenic and aesthetic resources.
- (2) The safety and public health consequences of a severe accident at Indian Point Units 2 and 3 would be so large as to exceed the medical capabilities of the region and the nation as a whole to care for the many thousands of irradiated and/ or contaminated persons.
- (3) The environmental consequences of severe accidents at Indian Point Units 2 and 3 are very large, arising from contamination of the environment over a very large area, thus preventing access to or use of this area, and rendering it unsuitable for many forms of life. Contamination of water supplies would also be massive; indeed, the Indian Point site is underlain by fractured limestone which can have a high permeability and low ability to absorb dissolved radionuclides. In addition, the Hudson River, on whose shore the Indian Point Units 2 and 3 reactors are sited, is heavily used for commerce and recreation, and leads into the United States' busiest port (New York City). Not only would contamination of the Hudson River affect nearby areas, but beaches as far away as Coney Island and Rockaway Beach could be affected by contaminated sediments (See, NUREG-0850, Volume I, Preliminary Report, *op. cit.*, Appendix D).

Con Edison's Response to Contention IV(A):

This is not an appropriate contention because: (1) the contention is not within the ambit of the Commission's questions,

no attempt being made to discuss the probability of the occurrence of the unspecified "accident" with "great consequences" as required by footnote 5 of the September 18 order; (2) the contention lacks specificity; (3) the "basis" of this contention suffers from the same reliance on conclusory statements as the contention; (4) the contention is not site-specific, there being no assertion that the accident risks at Indian Point are different from other reactors at other sites.

Contention IV(B):

The energy, economic, and other such consequences of preventative shutdown are irrelevant as a matter of law to the question of whether Indian Point Units 2 and 3 must be shut down to protect the public health and safety.

Basis for Contention IV(B):

This is a legal assertion which does not require a factual basis.

Con Edison's Response to Contention IV(B):

This is a legal challenge to the Commission's orders and should be raised, if at all, before the Commission. Licensees note, however, their disagreement with the claim.

Contentions of Richard L. Brodsky

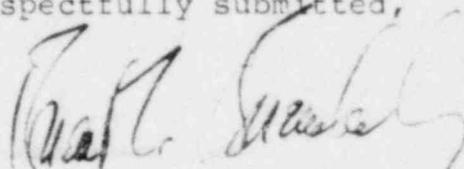
Contentions:

These contentions and bases for contentions merely restate verbatim those put forth herein by the Union of Concerned Scientists and New York Public Interest Research Group, Inc.

Con Edison's Response to Contentions:

Con Edison states as its response to each Brodsky contention and basis for contention the same response asserted respecting the parallel Union of Concerned Scientists and New York Public Interest Research Group contention and basis as if fully set forth here.

Respectfully submitted,



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Dated: New York, New York  
December 31, 1981

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Before Administrative Judges:  
Louis J. Carter, Chairman  
Frederick J. Shon  
Dr. Oscar H. Paris

----- )  
In the Matter of )  
 ) Docket Nos. 50-247 SP  
CONSOLIDATED EDISON COMPANY OF ) 50-286 SP  
NEW YORK, INC. (Indian Point, Unit )  
No. 2) December 31, 1981  
 )  
POWER AUTHORITY OF THE STATE OF NEW )  
YORK (Indian Point, Unit No. 3) )  
----- )

CERTIFICATE OF SERVICE

I certify that I have served copies of "Con Edison's Memorandum Respecting Contentions Proposed by Prospective Interveners" on the following parties by first class mail, postage prepaid, this 31st day of December, 1981:

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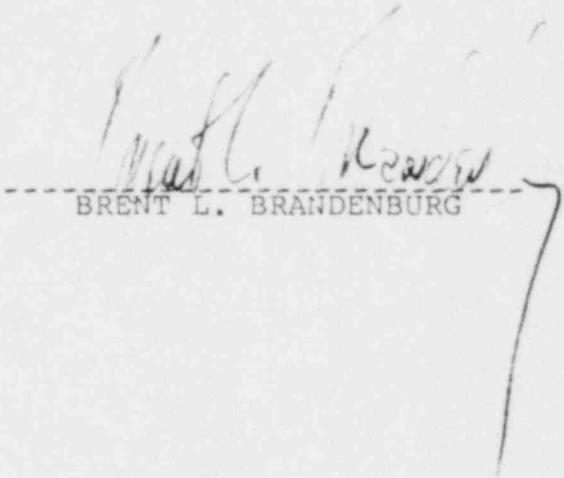
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