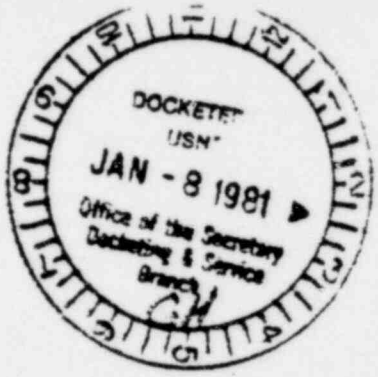

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

COMMISSIONERS:

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Victor Gilinsky
Joseph M. Hendrie
Peter A. Bradford

SERVED JAN 8 1981

CONSOLIDATED EDISON COMPANY OF NEW YORK (Indian Point, Unit No. 2) POWER AUTHORITY OF THE STATE OF NEW YORK (Indian Point, Unit No. 3)	Docket Nos. 50-247 50-286

MEMORANDUM AND ORDER

Background [1/]

On May 30, 1980, the Commission issued an order establishing a four-pronged approach for resolving the issues raised by the Union of Concerned Scientists' petition regarding the Indian Point nuclear facilities, and by the decision of the Director, Office of Nuclear Reactor Regulation (NRR), granting in part and denying in part that petition. The order announced the Commission's intention to hold a discretionary adjudication for the resolution of safety issues concerning the plants; initiated an informal proceeding for the purpose of defining the questions to be answered in that

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1/ The Commission has received a motion from the Union of Concerned Scientists, dated June 23, 1980, requesting the disqualification of Commissioner Hendrie from participation in this matter. In its Diablo Canyon decision (In the Matter of Pacific Gas and Electric, 11 NRC 411 (1980), the Commission, with Commissioner Bradford dissenting, stated that requests for the disqualification of a Commissioner would not be entertained by the Commission as a whole but would be referred to the Commissioner whose disqualification was requested. By memorandum of April 23, 1980, Commissioner Hendrie has denied the request for his disqualification.

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adjudication, as well as the criteria to be applied; announced the Commission's 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; 2/ and directed the Commission's General Counsel and Director, Office of Policy Evaluation, to establish a Task Force to address the question of the status of the reactors during the pendency of the planned adjudication. In this order, we will deal with the issue of interim operation of the Indian Point units during the adjudicatory hearing and will take the steps necessary to initiate that adjudicatory hearing.

Interim Operation

The Commission must decide whether the Indian Point Units 2 and 3 should continue to operate on an interim basis during the time it takes to complete the adjudicatory hearing we order today. A decision on interim operation is not a decision about the long-term safety of the Indian Point plants.

In his decision on February 11, 1980, the Director of Nuclear Reactor Regulation found that the interim risk of the continued operation of the Indian Point units did not warrant their shutdown while the matter was being further considered. Additionally, the Task Force, formed to conduct a separate investigation of comparative risks of interim operation, completed its work in June. The conclusion of the Task Force was that the overall risk of the Indian Point reactors is about the same as the typical reactor on a typical site. The Task Force found that although the Indian Point site was considerably more risky than the average nuclear power plant site because of the density of the

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2/ By this Order, we direct the NRC staff to prepare, as a matter of high priority, a paper setting for options for addressing this generic issue.

surrounding population, the design features of the plants reduced the accident risk from Indian Point by a comparable factor. The report acknowledged, however, that the degree of uncertainty for the design comparison was much greater than for the site comparison. Based upon this report, as well as the Director's previous decision, we concluded on July 15 that the risk posed by the operation of the Indian Point facilities did not warrant the suspension of the operating licenses during the adjudicatory proceedings. The Task Force findings and the Director's findings are not the final judgment on the safety of Indian Point Units 2 and 3. That final judgment may only be made after all parties have had the opportunity to examine in detail the Task Force report and other evidence presented by the NRC staff and present additional evidence of their own. In the event that the Licensing Board conducting the adjudication determines that new evidence warrants interim relief, it may at any time recommend a course of action to the Commission. The Task Force Report itself will be distributed free upon a written request to the NRC.

In making this decision, we considered the positions taken by the many commenters. Certain of those positions warrant specific discussion.

UCS has alleged that there are specific safety defects in the Indian Point units which raise questions about whether or not the units comply with NRC regulations. The Director responded to these allegations in his February 11, 1980 Order and UCS responded in turn in the submittal of March 10, 1980. We believe these specific allegations raise issues which are best resolved in the forthcoming adjudicatory proceedings. We have not made a judgment about these allegations and rely in the interim upon the judgment of the Director of NRR. However, we do note that the Task Force report found

no significant difference in risk between the Indian Point 2 and 3 designs. It also found that the technical fixes ordered in the Director's decision would be clearly beneficial in reducing risk, but questioned whether the factor of improvement was significant in light of the uncertainties in estimating overall risk. If the Board at any time during the proceeding believes that any of these issues are serious enough to warrant immediate action, it should make an appropriate recommendation to the Commission.

Several commenters contended that the Commission should not permit continued operation because of the lack of an emergency plan for the surrounding area. While a successful plan for evacuation at Indian Point would probably reduce overall risk, the fact is that most operating reactor sites do not yet have an approved plan and Indian Point is not different in this regard.

New York PIRG requested that we make no decision on interim operation until Senate confirmation of a new chairman. We cannot delay Commission business pending a confirmation process which is beyond our control. Furthermore, such delay would not make a significant difference in this case since the decision on interim operation was unanimous. New York PIRG also requested that the Commission examine a copy of the FEMA review on the status of state and local emergency planning ordered by the President. We have examined this report and it does not change the opinion on emergency planning we expressed above.

We note that the Governor of New York has strongly urged that the plants remain in operation pending the outcome of the proceeding.

Both UCS and New York PIRG sought to address the Commission orally on the subject of interim operation. By a vote of 2-2, that request was denied.

The recent leaks of large amounts of water into the containment and reactor vessel cavity at Indian Point Unit 2 are still being reviewed by the Commission's Office of Inspection and Enforcement. On November 14, 1980, the Commission received a briefing on the status of the investigation at Indian Point Unit 2, and on the implications of the problem for Unit 3. Unit 2 is currently shut down, and must remain so for a period of months, for repair of the fan cooler units and refueling. With respect to Unit 2, prior to resumption of operations, the Commission will determine whether its decision of July 15, 1980, to permit continued operation remains valid. With respect to Unit 3, we decided to stand by our earlier determination to allow operation during the pendency of the adjudication. Our judgment is based upon the information received in the November 14 briefing from the Director of the Office of Inspection and Enforcement, who advised that the containment fan cooler units at Unit 3 are in markedly better condition than those which have been the source of problems at Unit 2, and that Unit 3 has additional safety features not present in Unit 2 in this regard. 3/ Our judgment also reflects the fact that the two units are owned and operated by separate entities.

Adjudicatory Proceeding

The Commission has received a motion for reconsideration of that portion of the Commission's order dated May 30, 1980 which directs that an adjudicatory hearing be held on the long-term safety of the Indian Point units. The basis for the petition is the Task Force's conclusions that Indian Point poses the same overall societal risk and less of an individual risk than a typical reactor on a typical site. The licensees also contend that the population density is

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3/ See Appendix A, "Comparison of Indian Point Units 2 and 3."

not materially dissimilar from numerous other sites not subject to adjudicatory hearings.

We deny the motion for reconsideration. The licensees would have us treat the Task Force report as the final word on the risks of the Indian Point site, instead of a document designed to aid the Commission in its decision on interim operation. As we stated previously in this order, the Task Force report, compiled in a short time period and not disclosing its detailed methodology and underlying data, will be tested in an adjudicatory setting where parties may present additional or rebuttal evidence. Furthermore, the Task Force report, even if perfectly accurate, does not answer all of the questions the Commission wishes explored by the Licensing Board in a full proceeding. In short, we will not turn a decision on interim operation into a final decision on the long-term acceptability on the Indian Point site.

Licensees also contend that the Indian Point demography is not different from other sites. In fact, according to the Task Force report, Indian Point has the highest population within 10, 30 and 50 miles of any nuclear power plant site in the United States. At 50 miles, its population is more than double any other plant site.

The Commission directs that the discretionary proceeding will be conducted in the vicinity of Indian Point by an Atomic Safety and Licensing Board, using the full procedural format of a trial-type adjudication, including discovery and cross-examination. 4/ The purpose of the proceeding will be to take

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4/ Because of the investigative nature of this proceeding, further guidance is necessary with respect to certain procedural matters. Because the proceeding, although adjudicatory in form, is not mandated by the Atomic Energy Act, it is not an "on the record" proceeding within the meaning of the Atomic Energy Act. Although normal ex parte constraints will

(Continued on following page)

evidence and make recommended findings and conclusions on disputed issues material to the question whether the Indian Point Units 2 and 3 plants should be shut down or other action taken. The record of the proceeding, together with recommendations, will then be forwarded to the Commission for the final agency action on the merits of the proceeding. In view of the complexity of this proceeding, and in order that the Commission may make its decision within a reasonable period of time, we stress that the Board should focus clearly upon the questions asked by the Commission.

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

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4/ (Continued from preceding page)

apply to communications to the Licensing Board, the Commission will not be limited in its ability to obtain information with respect to Indian Point from any source. Because the Commission itself is designating by this Order the issues it wishes to be addressed in the adjudication, it is particularly important that the Licensing Board have discretion to formulate contentions and subissues, upon the advice of the parties, so as to effectuate that purpose. In admitting and formulating contentions and subissues, therefore, the Licensing Board will not be bound by the provisions of 10 CFR Part 2. The Licensing Board may also, without regard to the provisions of 10 CFR Part 2 establish whatever order of presentation it deems best suited to the proceeding's investigative purposes. Except as provided above or elsewhere in this Order, 10 CFR Part 2 will control. If the Board concludes that further relaxation of the rules is necessary for the efficient conduct of the hearing, we expect it to request such authorization from the Commission. The Commission expects the Licensing Board to use its authority under Part 2 to assure the relevance and efficency of discovery and cross-examination. The Licensing Board shall not reach an initial decision, but as noted in the Order, shall instead formulate recommendations on the questions posed by the Commission. No party will have the "burden of persuasion" as the term is normally used in adjudicatory proceedings; if evidence on a particular matter is in equipoise, the Board's recommendation may be expected to reflect that fact. The staff will be a party to the proceeding, and the licensees will be admitted as parties upon request filed within 30 days of Federal Register notice of the appointment of a Licensing Board. All others wishing to intervene shall file petitions for intervention within 30 days of Federal Register notice of the appointment of a Licensing Board. The appointment of the Licensing Board will be anounced by subsequent order of the Commission.

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.

The Commission is also interested in the current state of emergency planning in the vicinity of the Indian Point site and in future improvements in that planning as well as in resolving the specific contentions in the UCS Petition to the effect that some of our regulations are not met in one or both units.

Risks from nuclear power reactors are defined by the probabilities and consequences associated with potential accidents. In directing a comparison of the risks of the Indian Point units with those from a representative group of other operating units, the Commission is fully aware of the uncertainties that attend such quantitative risk assessment calculations (reference NUREG-CR-0400, the Lewis Report, and the Commission policy statement on it.) Despite these uncertainties, risk assessment methods offer the best means available for objective and quantitative comparison of the kind needed here. Further, some of the uncertainty that is associated with risk assessment estimates of the absolute values of accident probabilities and consequences does not apply to comparisons such as those sought here.

Several measures of risk are useful for the comparisons the Commission seeks. For individual risks, these include the probabilities of early effects -- fatalities and injuries that could occur soon after an accident -- and of long-term effects -- cancers and genetic effects that could occur more than a year after an accident, all as a function of distance from the reactor.

For societal risks the useful measures include early effects, long-term effects, and property damage and costs in terms of interdiction, decontamination, and crop and milk losses and the possibility that some areas affected by an accident might be uninhabitable for long periods. Societal risk measures should include the distributions of probabilities and consequences as well as the expected risks or mean annual values of the consequences. Risk measures of these kinds for the Indian Point units and for a representative group of other operating nuclear power plants were presented in the report of the Commission's Task Force on Interim Operation of the Indian Point, NUREG-0715, and were found useful by the Commission in its consideration of the interim operation matter.

In developing the record of the proceeding, the Board should address a series of questions as follows:

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

2. What improvements in the level of safety will result from measures required or referenced in the Director's Order to the licensee, dated February 11, 1980? (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 of the facility or facilities, would be within the scope of this inquiry.)

3. What is the current status and degree of conformance with NRC/FEMA guidelines of state and local emergency planning within a 10-mile radius of the site and, of the extent that it is relevant to risks posed by the two plants, beyond a 10-mile radius? In this context, an effort should be made to establish what the minimum number of hours warning for an effective evauation of a 10-mile quadrant at Indian Point would be. The FEMA position should be taken as a rebuttable presumption for this estimate.

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

5. Based on the foregoing, how do the risks posed by Indian Point Units 2 and 3 compare with the range of risks posed by other nuclear power plants licensed to operate by the Commission? (The Board should limit its inquiry to generic examination of the range of risks and not go into any site-specific examination other than for Indian Point itself, except to the extent raised by the Task Force.

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

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

The Commission would like to receive the Board's recommendations no later than one year from this date.

It is so ORDERED.

For the Commission

SAMUEL J. CHILK
Secretary of the Commission

Dated at Washington, D.C.

this 8th day of January, 1981.

Appendix A -- Comparison of Indian Point Units 2 and 3

In the aftermath of the event at Indian Point Unit 2 resulting from containment fan cooler leakage, an analysis was made to determine whether Indian Point Unit 3, which is of a nearly identical design, had any features which would preclude the type of event which had occurred at Indian Point Unit 2. At the time of that event, Indian Point Unit 3 was shut down for maintenance and inspection. The analysis indicated the following:

1. The maintenance history on the containment fan coolers is significantly better at IP-3 compared to IP-2; therefore, major leakage inside containment is much less likely to occur. Although the better condition is probably largely because IP-3 fan coolers are newer, at the present time the fact is they are in significantly better condition and are expected to remain so during the upcoming cycle.

   At IP-3, there have been no leaks in the piping associated with the fan coolers (such as the main contributing leak to the IP-2 event in a 10" service water return pipe). IP-3 has replaced five motor cooler units in their history after experiencing leakages up to approximately 2 gpm maximum from those units.

   Also, there are no "episeal" or "adams clamp" patches on the IP-3 coolers (there are numerous patches of both types on IP-2, some of which have had to be re-repaired). IP-3 has used "hard" solder (90/5/5) to build up a patch over several small leaks. Those patches, while not considered permanent, have proven more satisfactory than the IP-2 method.

   Finally, the fan-cooler service water isolation valves at IP-3 have all been rebuilt even though no recent problems have been experienced, and each fan cooler unit has passed the Technical Specification required 0.36 gpm/cooler leak rate test (this includes all valves, coils, pipes, etc., not just the isolation valves).

2. There are more indications in the control room of the sump levels in containment than there were at IP-2.

   a. The sump pump on/off levels of the vapor containment (VC) sump are adjusted so that five level lights (three on one column and two on another column) will turn on before water spills onto the 46' elevation floor (as opposed to four at IP-2). Since two are normally on even after the sump pumps have pumped the sump at each plant (the lowest 2 lights) that means 3 additional lights will come on at IP-3 as opposed to 2 at IP-2, before water spills onto the 46' elevation floor.

   b. A new capacitive detector device will detect approximately 1" of water on the 46' floor, with an audible control room alarm.

c. At IP-3, the recirculation sump is normally kept dry so that increasing levels in containment will also be detected by the two additional level indicating columns in that sump before water could flow into the reactor cavity (at IP-2, the recirculation sump is kept full of borated water, thereby negating usefulness of these indicators).

One of the two level indicating columns in each sump must be operable by Technical Specifications for continued plant operation.

3. Several features are present in the reactor cavity to prevent and detect collection of water there.

a. Two new pumps have been installed which will not operate in such a way as to be subject to trips on thermal overload, as might have been the case with the previous pumps. The pumps have been installed with a "siphon breaker" (3/4" vacuum relief line in the discharge loop above the 46' floor, where it will discharge into the VC sump).

b. A column has been installed in the cavity that will activate two independent audible alarms in the control room when approximately 1" and approximately 3" of water respectively are in the bottom of the cavity.

c. A search has been conducted for other siphon paths into the reactor cavity, resulting in sealing of one conduit connection on the 46' floor which represented a potential siphon path.

d. Two unlabeled lights inside containment that were incorrectly assumed to indicate cavity pump operation (when on) at IP-2 have been properly labeled at IP-3 (they do indicate cavity pump operation at IP-3, unlike IP-2 where they indicate moisture in the cavity).

e. The 46' floor has been "surveyed" using a water-filled tygon hose, with the result that water depth on the 46' floor at the sump before water would flow into the cavity would be approximately 5-1/2" (compared to variously reported 2" to 4" at IP-2 due to a reverse slope in the IP-2 46' floor).

4. In addition to Technical Specification requirements already mentioned (0.36 gpm leakage/fan cooler, one float column operable/sump) several plant requirements, some with calibration procedures, exist for equipment important for detection/prevention of "IP-2" type events.

a. Level switches and the capacitive level indicator must be calibrated by procedure each refueling outage.

b. Dew point detectors and weir level (containment fan cooler condensate and/or leakage flow detector) must be calibrated every two years.

c. Plant procedures require each shift recording and supervisory review of trends on the rotometer flow meter/totalizer installed on the line from the VC sumps to tanks outside containment. Changes in that flow would signal leaks in containment (by an increase) or the possibility of pump failure (by a decrease).

B. Long Term

With the above noted exceptions, many of the preventative and mitigative features described above are not defined as "safety-related" and/or they do not have formal operability requirements.

However, IP-3 personnel have been "tuned" to look for this type of event by IE Information Notice 80-37 concerning the IP-2 event, and by extensive discussion with NRC personnel. The NRC staff believes that in the near term, a flooding event at IP-3 is unlikely, and that if it did happen it would be promptly detected and corrected long before consequences become as severe as they did at IP-2.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

In the Matter of	)	
	)	
CONSOLIDATED EDISON COMPANY OF NEW YORK, INC.	)	Docket No.(s) 50-247 50-286
	)	
(Indian Point Station, Unit No. 2 and 3)	)	
	)	

CERTIFICATE OF SERVICE

I hereby certify that I have this day served the foregoing document(s) upon each person designated on the official service list compiled by the Office of the Secretary of the Commission in this proceeding in accordance with the requirements of Section 2.712 of 10 CFR Part 2 - Rules of Practice, of the Nuclear Regulatory Commission's Rules and Regulations.

Dated at Washington, D.C. this 8th day of Jan 1981.

Eugenia M Kleiman
Office of the Secretary of the Commission

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

In the Matter of	)	
	)	
CONSOLIDATED EDISON COMPANY OF NEW YORK, ET AL.	)	Docket No.(s) 50-247 50-286
	)	
(Indian Point, Units 2 and 3)	)	
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