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UNITED STATES  
ATOMIC ENERGY COMMISSION  
WASHINGTON, D.C. 20545

October 29, 1971

File

INDIAN POINT UNIT 1 INQUIRY (SECY-R 329)

50-3

SECY:FTH

The Commissioners have approved the subject Consent Calendar Item.

The Director of Regulation is taking the appropriate action.

Approved signed  
W. B. McCool

W. B. McCool  
Secretary of the Commission

cc:

Chairman Schlesinger  
Commissioner Ramey  
Commissioner Johnson  
Commissioner Larson  
Commissioner Doub  
General Manager  
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Asst. Dir. of Reg. for Reactors  
Asst. Gen. Counsel for L&R  
Asst. Gen. Mgr.  
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Controller  
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## VOLUME I - SUMMARY AND CONCLUSIONS

### Summary of Allegations and Conclusions

This report presents the results of an inquiry conducted at the direction of the Atomic Energy Commission by order dated June 26, 1970. The inquiry concerns allegations made to the Commission by individuals and private and governmental organizations concerning the effects of operation of the Indian Point Unit 1 nuclear plant of Consolidated Edison Company of New York. In essence these allegations were that significant irreparable and adverse effects upon the river ecology\* and marine\* life have resulted from plant operation due to withdrawal and discharge of river water and the discharge of chemical, thermal and radioactive effluents.

The Indian Point Unit 1 is a combination nuclear and fossil-fired steam power plant. The characteristics of its cooling water intake and discharge system and the warm water and chemical discharges are generally typical of fossil-fired plants; the radioactive discharges are generally typical of nuclear plants.

The background of the inquiry and the discussion of the conclusions are explained in great detail in Section A and D respectively in this Volume of the report. The overall conclusion is summarized below, followed by individual conclusions for each of the specific allegations.

### Overall Conclusion

There is insufficient evidence to substantiate the allegation that there have been significant, irreparable and adverse effects upon the river ecology and marine life. The data on discharge of radioactive wastes indicate that discharge of radioactivity has not caused damage to the river and its marine life. Large numbers of fish have been killed as a result of plant operations, essentially due to the withdrawal of large volumes of river water into the plant and the nature of the plant's associated intake system. However, there is insufficient evidence to establish that the killing of these numbers of fish has caused a deleterious effect on the fish population, propagation and overall ecology. Although there is a lack of precise data on thermal and chemical discharges, it is unlikely that the related allegations are valid.

\*The terms "ecology" and "marine" which are used throughout this report should more properly be called "ecosystem" and "aquatic".

1. ALLEGATION - The operation of the Indian Point 1 plant (IP-1) has had a substantial, irreparable and adverse effect upon the ecology of the Hudson River by causing tens of thousands of fish and other forms of marine life to be killed or seriously damaged.

CONCLUSION - As a result of IP-1 operations from August 1962 to June 1970, at least 1-1/2 million, and perhaps as many as 5 million, fish have been killed. There is insufficient data to establish the significance of the numbers of fish killed as to the effect on the total fish populations and the overall ecology. There has been no observation of injury to forms of marine life other than fin fish; however, it is suspected that some organisms -- including fish eggs and larval fish -- passing through the plant have been damaged or killed. There is a lack of evidence to substantiate that the killing of the fish and the possible harm to some organisms have resulted in substantial, irreparable and adverse effect upon the ecology of the Hudson River.

2. ALLEGATION - The withdrawal and discharge of great quantities of river water has resulted in the killing of tens of thousands of fish and other forms of marine life and has damaged the ecology of the Hudson River.

CONCLUSION - The suction caused by the withdrawal of large volumes of river water and the intake structure equipment have been responsible primarily for the killing of the fish. The layout of the wharf and related structures located over the intake area appear to have attracted large numbers of fish to that location for shelter.

3. ALLEGATION - The discharge of toxic effluent and other harmful substances has resulted in the killing of tens of thousands of fish and other forms of marine life and has damaged the ecology of the river.

CONCLUSION - The data available pertaining to chemical discharges indicate that the plant's routine discharges have not caused any serious effect on the river and its marine life. However, occasional discharges at concentrations higher than prescribed limits cannot be precluded. Such discharges could have had transitory effects on marine life near the plant.

4. ALLEGATION - The discharge of heated water into the river has resulted in the killing of tens of thousands of fish and other forms of marine life and has damaged the ecology of the river.

CONCLUSION - No evidence has been found that the discharge of heated water from the plant has had direct harmful effect on fish or other forms of marine life. However, the lack of accurate data does not permit excluding the possibility that there may have been instances when temperature limits were exceeded for short periods of time. In addition, there is indication, particularly for the earlier years of operation, that warm discharge water was recirculated through the intake structure by tidal action and that fish are attracted to this zone of warmer water during winter months, thereby increasing the possibility of trapping fish on the intake screens.

5. ALLEGATION - The discharge of radioactive substances into the river has resulted in the killing of tens of thousands of fish and other forms of marine life and has damaged the ecology of the river.

CONCLUSION - The extensive data available on the discharge of radioactive wastes in the river indicate that the discharge of radioactivity has not caused any damage to the river and its marine life.

6. ALLEGATION - The operation of the Indian Point plant endangers the health and safety of the public in that the waters of the Hudson River have been seriously polluted and a vast number of fish and other plant and animal life of the Hudson River and its environs have been rendered unfit and/or unsafe for human consumption.

CONCLUSION - Except for the killing of fish at the intake structure, the information available does not substantiate that the operation of the plant has caused any pollution of the river or rendered its plant and animal life unfit or unsafe for human consumption.