

ATTACHMENT A

INDIAN POINT UNIT NO. 2

DOCKET NO. 50-247

STEAM GENERATOR INSPECTION PROGRAM

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INTRODUCTION

As presented in the letter from Mr. William J. Cahill, Jr., of Con Edison, to Mr. Robert W. Reid of the Nuclear Regulatory Commission, dated October 26, 1976, Con Edison is participating in a joint program with other utilities. The program consists of inspection and data gathering at the various facilities to determine the extent of the steam generator tube problem.

In November 1976, as part of this joint program, Con Edison performed additional inspections of the Indian Point Unit 2 steam generators. The inspections supplemented the steam generator inspections that were conducted during the Unit's first refueling outage which began March 30, 1976. A description of both inspection programs and their results is given on pages 2 through 3, of this report.

In compliance with the requirements of Amendment No. 23 to the Indian Point Unit 2 Facility Operating License DPR-26 and as part of the joint utility group program of steam generator investigation, Con Edison is planning a re-inspection of the steam generators. An outage to perform this re-inspection is scheduled to begin March 28, 1977. This program was developed based on the results of the previous steam generator inspections which showed that the Indian Point Unit 2 steam generators did not have the problems which were observed at other facilities. A description of this program is given on pages 4 through 6 of this report.

CURRENT STATUS OF THE STEAM GENERATOR AT INDIAN POINT UNIT NO. 2

During the first refueling outage at Indian Point Unit No. 2, the following steam generator inspections were carried out:

1. Hand Hole Inspection on Steam Generators 21, 22, 23 and 24

These inspections included visual and photographic examination of the first (bottom) tube support plate and flow slots. The results of an examination of the photographs indicated that some flow slot "hour-glassing" existed, averaging about 1/8 inch. (This is only about 5% of the slot width as contrasted to deformation at other plants which were in some cases, as great as 100% of the slot width.)

2. Eddy Current Examination of Steam Generators 21 and 22

These examinations were carried out on 6% of the tubes in each steam generator. The results of the examination indicated no tube defects, although minor to moderate tube denting was present at a number of the tube/support plate intersections.

During the unit outage in November 1976, the following steam generator inspection program was performed:

1. Eddy Current Examination of Steam Generators 23 and 24

These examinations were carried out on rows two through five of the two steam generators. The inspections

indicated that no defects through the U-bends of these tubes existed.

2. "Hillside Port" Entry and Examination

A hole was drilled in the lower shell of Steam Generator No. 22, slightly above the upper tube support plate and just below the tube U-bends. The examination made through the "Hillside Port" consisted of visual, photographic, and gauge measurements of flow slots in the uppermost tube support plate, using an adjustable probe. Measured variations in slot width and a photograph of one flow slot are given in attachments to the November 18, 1976 letter from Mr. Carl L. Newman of Con Edison, to Mr. Robert W. Reid, of the Nuclear Regulatory Commission. The results indicated no departure from straightness in the flow slots beyond the variations expected in a flame-cut edge.

In conclusion, the results of these inspections demonstrated that the Indian Point Unit No. 2 steam generators are acceptable for continued service.

PLAN FOR FURTHER INVESTIGATION

In compliance with Amendment No. 23 to the Indian Point Unit No. 2 Facility Operating License DPR-26, the following program of steam generator inspections is planned:

1. Steam Generator Eddy Current Examination

Eddy Current examinations will be performed on the hot leg tubes of two steam generators. A minimum of 6% of the total number of tubes in these two steam generators will be examined. The inspection will include tubes in rows two through five. Tubes in row one will not be inspected because all the tubes in row one in steam generators 21, 22, 23, and 24, were plugged during the construction phase when modifications were made to the water box divider plates on each steam generator.

2. Lower Support Plate Inspection of One Steam Generator

Using the six inch handhole above the tube sheet of the steam generator, a visual and photographic examination of the lower support plate will be made. Higher support plates will also be inspected if the optical instruments used to make this examination are capable of performing these inspections.

3. Top Support Plate Inspection of Steam Generator No. 22

The innermost or row number one steam generator tube U-bends and the flow slots in the top support plates will be inspected using the "hillside port" entry in Steam Generator No. 22. A boroscope will be utilized to make these observations. If the visual examination reveals any distortion of the flow slots, gauge measurements of the slots will be made.

EVALUATION AND REPORT OF RESULTS

The results of the planned inspection at Indian Point Unit No. 2, will be evaluated by Con Edison and Westinghouse. Westinghouse will also compare the results of these inspections with the findings of steam generator inspections at other facilities. A report of these evaluations will be provided to the Nuclear Regulatory Commission as soon as it is completed.