



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

SUPPLEMENT TO

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
SUPPORTING AMENDMENT NO. 47 TO FACILITY OPERATING LICENSE NO. DPR-50

METROPOLITAN EDISON COMPANY
JERSEY CENTRAL POWER AND LIGHT COMPANY
PENNSYLVANIA ELECTRIC COMPANY

THREE MILE ISLAND NUCLEAR STATION, UNIT NO. 1

DOCKET NO 50-289

Introduction

By letter dated June 27, 1978, Metropolitan Edison Company (Met Ed) was advised that, barring receipt of written notification of disagreement within 20 days, we intended to initiate steps to issue Technical Specifications (enclosed with the letter) governing steam generator tube inspection at Three Mile Island Nuclear Station, Unit No. 1 (TMI-1). By letter dated July 14, 1978, Met Ed responded that they found the Technical Specifications we had proposed to issue acceptable except for two items:

- (1) Met Ed requested that special test provisions be provided for certain defined groups of steam generator tubes, and
- (2) Met Ed requested a change in the action required for certain steam generator tube inspection results.

Background

With respect to item (1), above, operating experience to date with Babcock and Wilcox designed steam generators indicates that most tube degradation occurs in localized areas adjacent to the tube

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inspection lane and in the vicinity of the 15th tube support plate where tubes pass through drilled, as opposed to broached, holes*. It is believed that degradation preferentially occurs in these areas because of the local combination of flow conditions and fluid properties. The Technical Specifications for steam generator tubes as originally proposed would require that at least 50% of the first sample of tubes selected for inspection (3% of the total number of tubes in all steam generators) be from this area (where experience has indicated potential problems). As an alternative to this requirement, Met Ed proposed to define one or more areas in the steam generators where experience has indicated that degradation is most likely, and to optionally perform an inspection of all of the tubes in these areas in both steam generators. In addition, Met Ed would inspect the tubes not so inspected in accordance with the general provisions of the proposed Technical Specifications. According to the Met Ed proposal, the number of tubes inspected in the defined potential problem area(s) would not reduce the number of tubes examined in the associated general inspection; but at the same time, degraded or defective tubes identified in the defined potential problem areas would not be used in determining the results category for the general inspection and vice versa.

As for item (2), above, Met Ed had previously proposed certain revised wording for the action to be taken when a C-3 result was obtained.

* A broached hole is typically a fluted circle rather than a plain circle.

as a result of an inspection. In our letter to Met Ed of June 27, 1978, we explained why such wording was not acceptable and provided acceptable alternate wording. In lieu of the alternate wording provided by the NRC staff, Met Ed has requested that the wording originally used in the model Technical Specifications supplied to Met Ed in our letter of September 14, 1976, be restored.

Evaluation

As for item (1), Met Ed is proposing that the tubes in the steam generator be classified into two groups: (1) a group of tubes in well-defined areas where experience has indicated that tube degradation is most likely (the defined group) and (2) the balance of the tubes in the steam generators. Met Ed is also proposing that, at their option, these groups may be subject to different inspection requirements. Specifically, Met Ed may or may not elect to perform an inspection of every tube in the defined group in both steam generators. If they elect to perform such an inspection, the balance of the steam generator tubes will be subject to the normal inspection requirements with no reduction of sample size. At the same time, degraded or defective tubes identified within the defined group will only be used to establish the results category for that group and not for the overall population of tubes.

On the other hand, if Met Ed elects to not inspect every tube in the defined group in both steam generators, the specifications would

require that the normal inspection be performed. In this case, the specifications require that at least 50% of the tubes inspected be in areas where experience has indicated potential problems. Accordingly, with either option, inspection of tubes in potential problem areas is emphasized. Under the provisions of Met Ed's proposed revision, however, all of the tubes in these areas may be inspected. Therefore, we conclude that with the proposed revision the extent of the inspection of tubes in potential problem areas is not diminished and may be increased. In addition, we conclude that the extent of the inspection of the balance of the steam generator tubes is not reduced.

Upon completion of steam generator inspection, the results are classified into one of three categories (Specification 4.19.2) depending upon the number of defective or degraded tubes discovered. This results category determines the repairs that must be performed; the additional inspection required at that outage, if any; whether prompt reporting of the results to the NRC is required and the maximum permissible interval until the next inspection is conducted. Met Ed, however, did not propose the action required for the various results categories for inspection of the defined group of tubes. Accordingly, we have developed appropriate action requirements governing repair, prompt reporting and inspection intervals. These have been discussed with and agreed to by Met Ed. We have not developed action requirements relative to additional inspection, however, because all tubes in the defined group are inspected if this option is exercised,

We have also revised Met Ed's submittal to provide a clear definition of the tubes included in the defined group. These revisions have also been discussed with and agreed to by Met Ed.

Based on the foregoing, we conclude that inclusion in the facility Technical Specifications of provisions for electively inspecting all tubes in defined areas as requested by the licensee, and revised by the NRC staff, does not reduce the effectiveness of the overall steam generator tube inspection program and is therefore acceptable.

As for item (2), which deals with the action required when certain inspection results are obtained, the exception requested by Met Ed would merely restore the required action to that specified in the model Technical Specifications developed by the NRC staff. Since this required action was previously acceptable, its restoration is also acceptable.

Environmental Consideration

We have determined that the amendment does not authorize a change in effluent types or total amounts nor an increase in power level and will not result in any significant environmental impact. Having

made this determination, we have further concluded that the amendment involves an action which is insignificant from the standpoint of environmental impact and, pursuant to 10 CFR § 51.5(d)(4), that an environmental impact statement or negative declaration and environmental impact appraisal need not be prepared in connection with the issuance of this amendment.

Conclusion

We have concluded, based on the considerations discussed above, that: (1) because the amendment does not involve a significant increase in the probability or consequences of accidents previously considered and does not involve a significant decrease in a safety margin, the amendment does not involve a significant hazards consideration, (2) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, and (3) such activities will be conducted in compliance with the Commission's regulations and the issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public.

Date: December 22, 1978