



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

November 15, 1979

Docket No. 50-320

Metropolitan Edison Company
ATTN: Mr. R. C. Arnold
Senior Vice President
P. O. Box 480
Middletown, PA 17057

Dear Mr. Arnold:

On September 17, 1979, the NRC staff requested Metropolitan Edison Company to provide a program detailing plans for controlling primary system chemistry and indicating the limits to be maintained on all contaminants at various reactor coolant conditions. This request was prompted by the staffs' concern about the potential effects of corrosion on reactor coolant system components and on the primary system integrity throughout the recovery mode.

Met-Ed's response, October 16, 1979, enclosed a report prepared by B&W setting forth recommendations and requirements for controlling chemistry and corrosion in the TMI-2 reactor coolant system.

In reviewing this program the staff found that with the limits prescribed for coolant chemistry the potential for chloride stress and general stress corrosion would be minimized. However, when reviewing the sensitivity of the sample analysis instrument it was found that the minimum oxygen detection capability of the gas chromatograph was 4cc/kg or approximately 5 ppm. Dissolved oxygen in the presence of high chloride concentrations contribute to an environment conducive to accelerating chloride stress corrosion and chloride stress corrosion cracking of sensitized areas. The B&W report recognizes the high chloride concentrations existing in the TMI-2 reactor coolant system and submits that if oxygen concentrations are maintained below 0.1 ppm the potential for stress corrosion is greatly reduced. The staff concurs with this. Nevertheless, since our evaluation was based on maintaining oxygen at levels less than 0.1 ppm, and minimum detectable oxygen is 5 ppm, we cannot conclude that Met-Eds' chemistry control program has provided the sensitivity necessary to accurately predict the corrosive activity of the primary coolant nor will it suffice to indicate when corrosion mitigating actions should be taken.

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On this basis, you are requested to provide within 15 days from the date of this letter your plans for accurately quantifying the oxygen concentration of the reactor coolant system. Your proposal for oxygen analysis should include a complete description of the technique, procedure, and equipment to be used along with sensitivity values and tolerances. In the event that the oxygen concentration cannot be quantified with reasonable certainty you should be prepared to discuss the measures to be taken to mitigate the consequences of chloride stress induced cracking of the reactor coolant system piping and its effects on the long term cooldown and recovery operations at TMI-2.



John T. Collins
Deputy Director, TMI Support

cc:

- J. G. Herbein, Vice President Nuclear Operations
- E. G. Wallace, Licensing Manager
- G. P. Miller, Manager Support Services and Logistics
- J. B. Logan, Superintendent Unit 2
- G. A. Kunder, Unit 2 Superintendent - Technical Support
- J. J. Colitz, Manager Plant Engineering
- R. F. Wilson, Director TMI-2 Recovery, Acting
- I. R. Finrock, Jr.
- R. W. Conrad
- G. F. Trowbridge, Esquire
- J. B. Lieberman, Esquire
- Ms. Mary V. Southard, Chairperson, Citizens for a Safe Environment
- John T. Collins, Deputy Director, NRC, TMI Support

bcc:

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Commonwealth of Pennsylvania

Ms. Mary V. Southard, Chairperson, Citizens for a Safe Environment