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MAR 19 1982

Bruce Molholt, Ph.D.
Director
Center for Environmental Health
1315 Walnut Street
Suite 1632
Philadelphia, Pennsylvania 19107



Dear Dr. Molholt:

Your letter of February 15, 1982 to Chairman Palladino was referred to me for reply. In your letter you refer to recent steam generator tube inspection results from Three Mile Island Unit 1 and the Ginna Nuclear Power Plant, and you conclude by recommending that the NRC mandate fiber optic inspection in all pressurized water reactors.

For your information the primary means used to inspect for steam generator tube degradation is eddy current testing (ECT). This method is used because it can detect and measure the depth of flaws in steam generator tubes. Fiber optic inspection and other visual techniques such as television cameras are incapable of detecting all forms of steam generator tube degradation. They are, however, used to supplement ECT findings, to detect and locate foreign material in steam generators, and to aid in steam generator tube repairs.

In the case of TMI Unit 1, tube degradation was first determined using the ECT method with subsequent fiber optic inspection used to visually confirm that the proper tubes were being repaired. At the Ginna nuclear plant, fiber optic inspection was used to locate and characterize the recent steam generator tube failure. During this inspection, foreign material was found in the faulted steam generator.

The NRC has relied upon quality control measures to provide assurance against foreign material remaining in steam generators after inspections or repair operations. Although these measures have been reasonably effective, due to recent events we are reassessing our requirements in this regard. It is uncertain at this time whether or not the existing quality control measures will be supplemented by visual inspection techniques, such as fiber optics, since these events are currently under active review.

I trust that the information provided by this letter is responsive to your letter.

Sincerely,

Original Signed by
H. R. Denton

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G PDR

Harold R. Denton, Director
Office of Nuclear Reactor Regulation

*SEE PREVIOUS PAGE FOR CONCURRENCE

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PWR

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Director
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The NRC has relied upon quality control measures to provide assurance against foreign material remaining in steam generators after inspections or repair operations. Although these measures have been effective, the Ginna event may cause us to reassess our requirements in this regard. It is uncertain at this time whether or not the existing quality control measures will be supplemented by visual inspection techniques, such as fiber optics, since this event is currently under active review.

I trust that the information provided by this letter is responsive to your letter.

Sincerely,

Harold R. Denton, Director
Office of Nuclear Reactor Regulation

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CENTER FOR ENVIRONMENTAL HEALTH
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DIRECTOR

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OFFICE OF SECRETARY
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Dr. Nunzio J. Palladino, Chairman
Nuclear Regulatory Commission
Washington, D.C. 20555

15 February 1982

Re: Steam generator tubes in PWRs

Dear Dr. Palladino,

Twice in the past month significant damage to steam generator tubes of pressurized-water nuclear reactors have been discovered during detailed inspections. In November, 1981, at Three Mile Island, Unit 1, the routine type of inspection for steam generator tubes indicated that 124 were damaged. Closer inspection last month, however, revealed that as many as 10,000 tubes at TMI-1 contain cracks. Until fiber optics were employed, the extent of tube damage in the steam turbine at TMI-1 was vastly underestimated.

Similarly, at the Ginna reactor, much more extensive damage to steam turbine tubes was found than anticipated upon examination with fiber optical systems. There have been recent reports of extensive damage to piping due to corrosion at other nuclear power plants, such as at Indian Point.

Given that corrosion and foreign body damage to tubing within the steam turbines may be a rather common feature of pressurized-water reactors, it would behoove the Nuclear Regulatory Commission to catch these "accidents waiting to happen" before another incident like the Ginna site emergency, or worse, erupts. I strongly urge the Nuclear Regulatory Commission to mandate complete fiber optical inspection of all extant pressurized-water reactors in the U.S. at their next refueling.

Yours sincerely,

Bruce Molholt
Bruce Molholt, Ph.D.
Director

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cc:

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Bruce Molholt

Incoming: _____

From: Center for Environmental Health

To: Palladino Date 2/15/82

Subject: steam generator tubes in PWRs

- ☐ Prepare reply for signature of:
- ☐ Chairman
 - ☐ Commissioner _____
 - ☐ EDO, GC, CL, SOL, PA, SECY
 - ☐ Signature block omitted
 - ☐ _____
 - ☐ Return original of incoming with response

☒ For direct reply* Suspense: Mar 16

☐ For appropriate action

☐ For information

☐ For recommendation

Remarks: Cyps to: RF, docket

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2:00

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For the Commission: _____

*Send three (3) copies of reply to Secy Mail Facility

Molholt

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1315 Walnut St., Suite 1632, Philadelphia, 19107
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Dr. Nunzio J. Palladino
Chairman
U.S. Nuclear Regulatory Commission
Washington, D.C.

20555