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March 25, 1985

TMI Program Office
Attn: Dr. B. J. Snyder
Program Director
US Nuclear Regulatory Commission
Washington, DC 20555

Dear Dr. Snyder:

Three Mile Island Nuclear Station, Unit 2 (TMI-2)
Operating License No. DPR-73
Docket No. 50-320
Reactor Building Decontamination and Dose Reduction
Activities Safety Evaluation Report, Supplement 1

Attached for your information is Supplement 1 to the updated Reactor Building Decontamination and Dose Reduction Activities Safety Evaluation Report (SER). This SER was transmitted to your office on February 8, 1985, via GPU Nuclear letter 4410-85-L-0001. The purpose of this supplement is to correct typographical errors on pages 9 and 22 of the SER.

Sincerely,

Thomas G. Dermott
for F. R. Standerfer
Vice President/Director, TMI-2

FRS/RDW/vjf

Attachments

cc: Deputy Program Director - TMI Program Office, Dr. W. D. Travers

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The system consists of five basic units:

- Superheated water supply
- Vacuum power unit
- Demister/HEPA filter units
- Liquid separator/trash collection system
- Decontamination tools

The main unit is designed to supply water at 200-250 psi and maximum 300°F to the nozzles, mounted in stainless steel vacuum/spray "head" tools, to perform the actual decontamination. The system design provides for most efficient operation when the spray is in a solid stream as it exits the nozzle and carries as much heat to the surface as possible.

Trial operations have demonstrated an average decontamination factor (DF) of 5.0 for a single pass on ductwork and cable trays, with DF's of 40.0 at individual survey points. Comparable results were obtained on floors and walls with the exception of bare concrete (DF = 1.6). Subsequent leaching restored contamination levels, thus negating the results; therefore, this technique is not recommended for large scale use on bare concrete, but may be used on hot spots such as boron deposits on concrete. Likewise, decontamination of Fuel Pool A proved reasonably effective on stainless steel lined surfaces. Coverage rates of at least 100 ft^2/min on painted concrete floors and walls indicate that routine decon maintenance of these surfaces can be accomplished in one-tenth less time than typical use of masslin wipe or equivalent techniques.

Based on these results, the Kelly Vacu-Mac may be used for decontamination of the following areas of the Reactor Building in 1985.

- Refueling canal floors and walls
- In-core instrumentation seal table
- Cable trays and ductwork in overheads
- Decon maintanance of painted floors and walls
- Other equipment/components surfaces required to obtain Phase III endpoints

Qualitative evaluation of post-accident containment environmental conditions (Ref. 8 and 9) indicates that the maximum operating temperature of the Kelly system is within the range attributed to hydrogen burn during the TMI-2 accident as follows:

- above El. 347' - 1400°F down to 600°F
- below El. 347' - 1200°F down to 350°F

TABLE 3-1

AVERAGE PARTICULATE AIRBORNE RADIOACTIVITY CONCENTRATIONS IN THE CONTAINMENT (REF. 18)

Radionuclide	Concentration (uCi/cc)
Cs-134	7.0E-11
Cs-137	2.6E-09
Sr-90	2.4E-11

TABLE 3-2

CALCULATED PARTICULATE AND TRITIUM AIRBORNE RELEASES TO THE ENVIRONMENT

Radionuclide	Release (Ci)
Cs-134	2.59E-5
Cs-137	9.74E-4
Sr-90	8.61E-6
H-3	4.55E+1

TABLE 3-3

DOSE IN MILLIREM TO MAXIMUM EXPOSED INDIVIDUALS FROM EACH PATHWAY FOR AIRBORNE RELEASES (52 WEEK CONTINUOUS PURGE, 25,000 CFM) (REF. 18)

Ground	Inhalation	Vegetation	Meat	Cowmilk	Total
1.8E-2	2.4E-3	8.9E-2	9.9E-4	2.5E-2	1.4E-1