

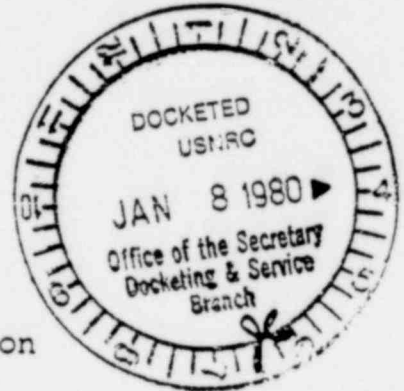
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January 4, 1980

Secretary of the Commission
ATTN: Chief, Docketing and Service Section
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

RE: Metropolitan Edison Company
TMI-1, Unit 1, Docket No. 50-289 Restart

Dear Sir:

The enclosed attachment was inadvertently omitted from the original copy of the "Union of Concerned Scientists Interrogatories to the Licensee." I apologize for any inconvenience which may have been caused.

Please serve a copy of this attachment on the service list for the above captioned proceeding.

Sincerely,

Ellyn R. Weiss /dmw

Ellyn R. Weiss

ERW/dmw
Enclosure

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TECHNICAL DETAILS OF CALCULATIONS

This appendix has been written for readers who are familiar with accident consequence calculations. Background information, for those who are not, can be found in Appendix VI of WASH-1400 (the Reactor Safety Study) or in Ref. E-1.

1) Dose Calculations

A. Meteorological Model

Calculations were made for typical weather conditions: 5 m/sec wind speed; Pasquill stability Class, D; .01 m/sec deposition velocity. A time independent Gaussian plume model was used with "top hat" approximation.*

Dispersion parameters were taken identical to those used in WASH-1400 (for a 30 minute release duration). Although experimental data used to determine the dispersion parameters are scarce beyond 20 miles, the model is satisfactory for calculating health effects when a linear relationship is used between dose and response. In such a case, the total number of health effects depends only upon the total population dose, which in turn is rather insensitive to the dispersion parameters and other modelling details -- if the population distribution is uniform.^{E2} Variation in the population density with distance from the reactor can introduce a model dependence into the results, but a large population effect, which dwarfs the radial variations, has already been included by calculating health effects for different wind directions.

In a uniform population distribution model, the inhalation dose component of the population dose tends to vary inversely with the deposition velocity.^{E2}

* See Appendix VI of WASH-1400. Note that full Gaussian calculations were made when calculating contaminated areas.

