

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING APPEAL BOARD

In the Matter of:

PENNSYLVANIA POWER & LIGHT CO.	:	
and	:	
ALLEGHENY ELECTRIC COOPERATIVE, INC.	:	Docket Nos. 50-387
(Susquehanna Steam Electric Station,	:	50-388
Units 1 and 2)	:	

AFFIDAVIT OF MARGARET A. REILLY

I, Margaret A. Reilly, being duly sworn, depose and state that:

1. I am an employee of the Pennsylvania Department of Environmental Resources, Bureau of Radiation Protection. My present position is Chief, Division of Environmental Radiation. I am a Certified Health Physicist. A copy of my professional qualifications appears in the transcript of this proceeding following page 2434.

2. The purpose of this affidavit is to respond to the question addressed to "All Parties" on page 4 of the Appeal Board's Order dated August 20, 1982, and to support the Stipulation of Withdrawal of Exception filed herewith. This response supplements the affidavit of Adolph L. Belser and Ralph J. Hippert.

3. In the current version of the Commonwealth of Pennsylvania's Disaster Operations Plan, Annex E, Fixed Nuclear Facility Incidents, Appendix 16 (Radiological Exposure Control), Attachment B (Dosimetry and Thyroid Gland Radioprophylactic Drug), Section IV, emergency workers are directed to evacuate to a decontamination station before receiving 25 R. In addition, workers who receive 5 R within thirty minutes are instructed to take immediate action (Section IV.A.3).

4. If the only self-reading dosimeter available to emergency workers was the 0-200 R pocket dosimeter, the emergency worker would be unable to observe a 5 R exposure delivered in one-half hour, and would therefore be unable to begin taking protective actions on his own behalf. (Five R is one-fortieth of full scale on that dosimeter, and therefore is not reasonably and reliably observable by the worker.)

In addition, redundant direct reading dosimetric information would not be available to the emergency worker if only one self-reading dosimeter is supplied. See Attachment 2, Section IV.A.4. If the 0-200 R dosimeter were accidentally discharged, the worker would unnecessarily be removed from duty, with the subsequent loss of his services. The outcome is undesirable. If only one self-reading dosimeter were to be distributed, a dosimeter range of 0-20 R or 0-50 R would be more desirable than 0-200 R due to their better sensitivity in the range of interest. Therefore, a second dosimeter of lower range than the currently available 0-200 R dosimeter is desirable.

Self-reading dosimetry in the form of 0-20 R pocket dosimeters are not technically required for use by evacuee monitoring teams and other personnel working for support counties and municipalities.

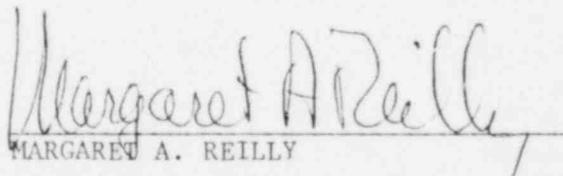
The function of the 0-20 R pocket dosimeter is to provide the emergency worker the means of observing sudden change in his exposure from the plume and ground deposition from the plume so that he can begin to take protective action on his own behalf. Field conditions can change dynamically in a short time. Workers in support counties are not likely to be exposed to the plume or to its ground deposition, and therefore do not need this range of pocket dosimeter. Contaminated evacuees would bring

surface contamination with them, but the resultant radiation "field" would be small compared to the radiation from contamination left behind. Also, exposure conditions are not expected to change suddenly in the support county workers environment.

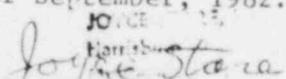
Another function of the 0-20 R pocket dosimeter is to provide warning of significant change in exposure to lone emergency workers many of whom could be expected to be intermittently out of contact with their source of direction and warning. Workers in support counties, being in a more controlled setting, are more likely to work in groups and to have closer contact with their source of direction and warning. These support county workers, therefore, do not need the independent warning provided by a 0-20 R pocket dosimeter.

5. Concerning the necessity for TLD's, since TLD's are not self-reading, they cannot be used by workers to gain assurance that adequate exposure controls are being taken. These dosimeters are used, rather, to develop records on the workers' total exposure, including those exposures beyond the range of the pocket dosimeters. Sensitivity of TLD's ranges from mR to kR. Further, since TLD's are read by a professional third party whose business it is to read TLD's, the readings are less prone to error. In addition, the TLD is not responsive to mishandling by the user, as is the pocket dosimeter.

TLD's are necessary for use by support county workers in order to document that exposure which they may receive in the course of attending to potentially contaminated evacuees and vehicles and related services outside the plume exposure EPZ.


MARGARET A. REILLY

Sworn to and subscribed
before me this 8 day
of September, 1982.


Joyce Stara 5, 1984