



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

August 9, 1979

MEMORANDUM FOR: John T. Collins, Deputy Director, TMI-2 Support

FROM: Richard A. Weller, Senior Nuclear Engineer, TMI-2 Support

SUBJECT: SHIELD DESIGN FOR INTERIM STORAGE OF SOLID WASTE

Some concern was raised about the adequacy of the shield design for both the interim and concrete storage facilities because of noticed streaming in the interim facility after placement of a 180 ft<sup>3</sup> liner in a large cell. Both storage facilities utilize the same shield plugs (3' thick). The liner which is responsible for the streaming measures approximately 1 r/hr on contact and the dose rate at the base joint between the shield plug and the asphalt cover is approximately 7 mr/hr. The streaming was completely eliminated with the application of a single course of lead brick along one side of the shield plug. It should be remembered that the shield plugs butt each other only in one dimension in the interim facility. It should also be remembered that the smaller cells in the interim facility have significantly more overlap of the shield plug over the cell than the larger cells. The streaming problem could be eliminated with the application of additional shield plugs on the open side of the in-place plugs but that would be overkill since the lead bricks are more than adequate to meet the design criteria (less than 5 mr/hr on contact) for the facility. From discussions with J. Flynn (GPU), the streaming problem will not exist in the concrete facility since the shield plugs will butt adjacent plugs in both dimensions, thus providing at least 3 feet of concrete shielding in every direction to meet the design criteria of 5 mr/hr on contact. The 3-foot shield plugs provide a factor of 10 safety margin to meet the design criteria.

*Richard A. Weller*

Richard A. Weller  
Senior Nuclear Engineer  
TMI-2 Support

cc: R. Vollmer

8212020241 790809  
PDR ADCK 05000320  
P PDR