



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

December 28, 1976

MEMORANDUM FOR: Boyce H. Grier, Dir., RIP, IE
FROM: Karl V. Seyfrit, Chief, RTA, RIP
SUBJECT: ALLEGATIONS OF DEFECTIVE WELDING IN THE SURRY
NEUTRON SHIELD TANKS

In my memorandum of December 16, 1976 to you concerning this subject, an assessment of the safety significance which might result from alleged welding defects was presented. This assessment was based on information obtained from the Surry Units 1 and 2 FSAR, and related to the shielding and cooling functions of the neutron shield tank. Continued review of this matter reveals that the shield tank also provides the support for the reactor vessel. This latter function was not immediately evident from the initial review.

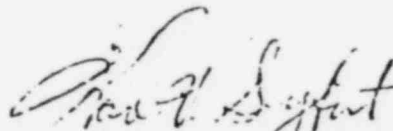
While the support function was not considered in my earlier memo, the conclusions as stated there remain valid. The basis for this conclusion with regard to the support function is that normal loading results primarily in compressive loads on the welds. Further, to significantly affect the load bearing capability of the structure, there would need to be gross weld failures. Such failures would likely initiate as leaks, which as discussed in my earlier memo, would be readily detected in the early stages of weld failure, affording ample time for reactor shutdown, analysis, and repair of the weld.

As you know, NRR is currently evaluating the effects of asymmetric loadings on reactor vessel supports under LOCA plus seismic loading conditions. These combined loadings might make the weld integrity a more important factor, since such conditions would result in loadings other than compressive. On the other hand, analysis of the asymmetric loadings may result in support modifications which would reduce reliance on the welds in question even further. It should be noted that the probability of

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either a LOCA or a design basis seismic event is quite low. The combination of these events, although they are not independent, would of course be even lower. For this reason, NRR is content to permit continued operation of PWRs while the asymmetric loading analysis continues. This analysis has been discussed with appropriate NRR personnel who agree with the stated position.

A question related to these allegations of poor welds in the shield tanks has been raised regarding whether or not there may be general problems with weld quality at Surry Units 1 and 2. You may recall that there were numerous welding deficiencies found during construction of these units. This led to increased attention to welding practices and augmented inspections in these areas. Based on these actions, there is presently no reason to believe that substandard welding is present in the piping systems at Surry Units 1 and 2.



Karl V. Seyfrit, Chief
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