



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

M. Aycock
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FU A11

OCT 24 1979

Generic Task No. A-11

MEMORANDUM FOR: Peter Kapo, Reactor Safety Branch
Division of Operating Reactors

FROM: Richard Johnson, TAP A-11 Manager
Engineering Branch
Division of Operating Reactors

THRU: Vincent S. Noonan, Chief
Engineering Branch
Division of Operating Reactors

SUBJECT: RES INPUT TO SUB-TASK E, TAP A-11

On October 2, I sent you a copy of Serpan's memo to me dated September 26, 1979. He cited questions related to neutron dosimetry aspects of A-11 which he now has answered in the enclosure of this memo. Since you have not alerted me to any disagreement with the questions, you gave tacit consent for him to proceed.

Please review the enclosure and solicit comments from others familiar with the field, particularly Bill Morris. If there is any reason why the answers provided by Serpan and his consultants cannot be used as a basis, in part, for Sub-Task E, TAP A-11, please inform me immediately.

Note that the schedule published in NUREG-0606, Vol. 1, No. 1, September 4, 1979, "Unresolved Safety Issues" Summary, Aqua Book, calls for completion of the A-11 NUREG chapter dealing with Sub-Task E on or before October 26, 1979. Please be on time.

Richard Johnson

Richard Johnson, TAP A-11 Manager
Engineering Branch
Division of Operating Reactors

Enclosure: As stated

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Memorandum dated OCT 24 1979 to Peter Kapo

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*: Without encl.

STANDARDIZATION OF DOSIMETRY-RELATED PROCEDURES FOR THE PREDICTION
AND VERIFICATION OF CHANGES IN LWR PRESSURE VESSEL STEEL FRACTURE
TOUGHNESS DURING REACTOR SERVICE LIFE: STATUS AND RECOMMENDATIONS

C. Z. Serpan

U.S. Nuclear Regulatory Commission
Washington, D.C.

I. INTRODUCTION

The U.S. Nuclear Regulatory Commission has established the LWR-PV Surveillance Dosimetry Improvement Program. The primary concern of this program is to improve, standardize, and maintain neutron dosimetry, damage correlation, and the associated reactor analysis procedures used to predict the integrated effect of neutron exposure of LWR pressure vessels.¹ Results from this program establish improved procedures for the prediction and verification of changes in steel fracture toughness during the service life of a LWR pressure vessel. Some questions are raised in this paper and concise answers are provided which relate the current and the future role of neutron dosimetry to the regulation of U.S. power reactors.

II. REQUIREMENTS

A. What are the regulatory requirements?

1. Appendices G and H of 10 CFR part 50 require:²
 - Prediction of neutron induced changes in LWR-pressure vessel steel fracture toughness for operating power plants.
 - Verification of prediction program data during
2. NRC Task A-11 on reactor requires:

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DUPLICATE DOCUMENT

Entire document previously
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