



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

DEC 04 1979

MEMORANDUM FOR: Leon L. Beratan, Chief
Site Safety Standards Branch, SD

FROM: Jerry Harbour, Chief
Site Safety Research Branch, RES

SUBJECT: DRAFT REPORT ON "A CHARACTERIZATION AND CLASSIFICATION OF
GEOLOGIC FRACTURES AND FAULTS IN THE APPALACHIAN FOLD BELT"

My staff has reviewed the subject report received by my office on November 5, 1979, and the following comments are provided.

In general, we feel that the report is an excellent treatise of the subject. However, it is much too long to be a Regulatory Guide to provide guidelines for Appalachian fault identification. More appropriately, it should be published as a NUREG document to be used as a reference in conjunction with a Regulatory Guide.

The "Introduction" is complex and confusing. It is not commensurate with the good quality of the text. The text warrants a much better introduction. The first paragraph is too long and the sentences are complex. It is not clear or specific. It should begin by stating the purpose of the report.

The first paragraph on page 3 is fuzzy. It should be clarified with a specific example. For example, the definition of a fault on page 9 is very confusing. Where did this come from? How was it developed? A joint (zero normal displacement) with 1 mm of parallel displacement, apparently qualifies as a fault. Furthermore, the "key definitions" section should refer to the glossary. Some definitions, like that for "healed fault," may be unverifiable or inapplicable in fault zones, and the term "fault zone" is used but not defined in the text or glossary.

Appendix A should be deleted. The subject of in situ stress measurements requires a much more comprehensive treatment than presented in Appendix A. There are many drawbacks to in situ stress measurement. If done, they must be conducted by experts under the most exacting conditions and control. And even then results may be subject to question. Appendix A should be handled by reference to more comprehensive documents.

Appendix D is excellent. It tells all a geologist ever wanted to know about lineaments, but was afraid to ask.

Jerry Harbour, Chief
Site Safety Research Branch
Division of Reactor Safety Research

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