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PROPOSED RULE PR- misc. Notice Reg. Guide

Secretary of the Commission
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Attention: Docketing and Service Branch

Sir:

The Okonite Company is submitting the following comments on Proposed Revision 1 to Nuclear Regulatory Guide 1.131 for consideration.

(1) The Proposed Nuclear Regulatory Guide in paragraph C.5 indicates that if synergisms between radiation effects and thermal aging effects exist, they be accounted for. This requirement in part addresses the question of sequential vs. simultaneous radiation and thermal aging. As is known, the vast majority of qualification tests have been done via sequential testing. Not nearly enough data is available at present to indicate the need for simultaneous testing. It is suggested that the consideration of synergism be deferred until such time as extensive reliable data is gathered.

(2) Paragraph C.6, covering the radiological source term leads to considerable confusion. This paragraph mandates the source term of Nuclear Regulatory Guide 1.89 which refers to Nuclear Regulatory Guide 1.7 which has to do with control of combustible gas concentrations.

It is our view that it is incumbent on the Commission to define the radiological simulator that is considered adequate for use in complying with its requirements.

It is clear that Guide 1.7 does not provide this information to the cable supplier.

The radiation simulator used extensively has been and is a Cobalt 60 gamma source. The Commission should recognize the fact that beta sources are not readily available and that neutron sources if used will require that remote handling equipment be available after exposure of components in order to test them.

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Gamma simulators are readily available and convenient. Cable qualification using beta and neutron sources as well as gamma sources, in our view, imposes an extremely severe and possibly unattainable experimental requirement on the industry.

(3) Paragraph C. 7 covers the subject of flame testing of aged cables. We would point out that the flame test procedure of IEEE 383 does not and was never intended to simulate the installed condition of cables in a plant. The fire of the test procedure in no way can be classified as a DBE fire. The original intent and the continuing intent of the flame test was and is as a new cable selector. Since aged cables will always be in an installed condition and little or no information is available on the correlation of the test conditions and the installed conditions, we see little advantage or benefit of testing cables after accelerated aging.

Further, the mechanisms of change, if any, of flame retardancy, as a result of accelerated aging do not parallel the changes in such things as elongation and retention of electrical properties. Since these mechanisms are different, using the established aging procedures developed for putting the cables in the end of life condition prior to LOCA testing may not be and probably is not valid in terms of their flame test behavior. In our view, more work is required to define the mechanisms of change of flame retardancy before a requirement for aged flame testing be imposed. It is also important to recognize that the flame test itself is subject to experimental scatter, and that to impose a poorly understood aging procedure as regards changes in flame retardancy, on top of the inherent variability of the flame test procedure could well lead to the exclusion of optimal cable constructions.

(4) In paragraph C. 9, the modifications of the flame test procedure of IEEE 383 given in the Proposed Regulatory Guide indicates that air flow should be such that the test fire is not starved of oxygen. No indication of what this air flow should be is given, nor are any guidelines given for even estimating the value. It is obvious that the air flow will have to be different for different cables and different cable constructions, since the fuel load in the test set-up is variable from cable construction to cable construction. It is also obvious that more guidance is required to better define this test parameter.

(5) Paragraph C. 11 of the Proposed Regulatory Guide calls for a single layer of cable to be used in the test. This regulatory position should clearly show that it is the intent of the Commission that the test is to

be run on single conductor cables or multiconductor cables with an overall jacket and not on duplex, triplex, or quadriplexed constructions, i. e. single conductors cabled together without an overall jacket. Such plexed constructions significantly change the test since the fuel load is increased dramatically and in effect exposes multi layers of cable in a nested configuration. It should be apparent that any cable containing significant amounts of organic materials can be arranged in such a fashion so as to fail the test. The intent of the test is as a cable selector and this intent should be retained. We strongly urge clarification in the Regulatory Guide position as indicated above.

(6) Paragraph C. 11, there is the statement that the cables be "tied every 18 inches". This should be modified to the words "at least every 18 inches". This is so because with certain constructions tying at 18 inches is not adequate to prevent uncontrolled cable movement during the test which can and does lead to non-reproducible results in the test. The cables must not move in the test to obtain reproducible results test-to-test.

It is hoped that the above comments are of use to the Commission.

Very truly yours,

THE OKONITE COMPANY

J. S. Lasky, Vice President
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