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

Attention: Docketing and Service Branch

Subj: 10CFR Part 54 Proposed Ruling Comments,

I am a specialist in research design, manufacturing, installation and testing of high voltage T & D cables and low voltage nuclear power plant cables for the last 25 years. Now "retired" 8 years, I am writing as an unaffiliated individual still active in IEEE standards and NPP cable installation work and am concerned for nuclear power promotion. But I see nuclear acceptance and expansion only if and when we specialists in the field can honestly say we all have done a good job in meeting evident risks to public safety. For a cable man, this is difficult in the field of license extension and the related field of equipment qualification.

First I will offer comments on the background NUREGS 1362 and 1412, then on the proposed Part 54 Ruling and its Supplementary Information in the Federal Register July 17. Finally I will suggest certain modifications in the Ruling or points that should be covered in a Regulatory Guide that would address concerns I see in the cable systems area.

NUREG 1362 Regulatory Analysis for Proposed Rule on NPP License Renewal

1) This report gives very helpful background perspective on the NRC staff and Commission thinking. I agree with the overall approach to the alternative safety review approaches and the resultant focusing on Alternative B. However, it is dissappointing, and I feel detracting, from the integrity of the report to see the evidence that major consideration was given in choosing Alternative B to how enthused or discouraged some utilities would be with the various alternatives. (See last three paragraphs of Sec. 4.7.4-1.)

2) Relative to standards development by the industry, the concept of a standards concensus group in the electric industry (IEEE) changing existing standards to encompass issues of license extension seem inappropriate at this time. NPEC WG 3.4, which started to address PLEX issues, has been deflected from doing this

by reported guidance from NUMARC. It now simply is addressing aging assessment of equipment. NPEC SC-2 (Equipment Qualification) has no work even under consideration except to give input to (coordination with) WG 3.4. The power of the single skilled NRC staff member to "insure that proper technical input is made" to WG 3.4 may be quite limited.

3) I believe the emphasis given to extension of qualified life for Aging Research and the required revision of EQ reports of Sec 8.3 p. 8-6 is very well taken. As the EQ document IEEE 323 is the prime concensus standard addressing technical aspects of aging and qualified life of 1E equipment and 10CFR 50.49 is the key NRC requirement document for harsh environment equipment qualification, it is surprising that so little reference is made to these or qualification as such in this NUREG, NUREG 1412 or in the proposed Part 54 Ruling and its Supplemental Information. As a specialist in the cable systems field, I find the apparent lack of recognition of the close relevance of EQ to PLEX a very disturbing aspect of the Ruling and related publications. Further note of this is given in my comments on the Proposed Ruling.

4) The importance of cable systems is evident from Table D.2 p. D-7 and Table D.3 p. D-13 and 14 but in the latter table no concern is indicated for ISTM enhancements for the cable system components of I & C channels. I believe this is a bad oversight. In table D.4 p. D-17, cable systems show up as a cost factor for I & C channels which further suggests the oversight in Table D.3.

5) The references listed for Sec 4 (pp 4-60 through 62) do not note Vol. 2 of the November 1989 Shah and MacDonald NUREG/CR 4731. Perhaps consideration of this volume's Chapter 13 on Cables would have avoided the apparent oversight in Table D.3.

<u>NUREG 1412 Foundation for the Adequacy of the Licensing Bases</u>

1) Sections 3.11.1 and 3.11.3 make clear that the design of electrical equipment important to safety and in harsh environments can meet aging (life) requirements through equipment qualification (10CFR 50.49, etc.). It then seems very strange that Sec 7 (I & C Systems) and 8 (Elec Power) never refer to EQ as a foundation of adequacy of license bases. Instead, Sec 7 notes Single Failure Criteria (for which most low voltage cables present unresolved issues) and Sec 8 notes that designs must permit appropriate periodic test and inspection (which, for most low voltage cable systems, there are no present effective and accepted practices).

2) I conclude that NUREG 1412 is an informative general summary but for cable systems it presents a misleading and troublesome perspective. I would be willing to enlarge on these comments if the staff or Commission would wish to have me do so.

Proposed Part 54 Ruling and Supplementary Information

This writer is not attuned to the expected content and relation between the proposed Ruling and subsequent Regulatory Guides so some of the comments to follow may be found more appropriate for consideration in a Regulatory Guide than for the Ruling.

1) The Ruling and Supplemental Information's lack of mention of, let alone emphasis on, equipment qualification (EQ) in the context of relevant technical information, licensing bases or aging management are, I believe, a serious oversight. EQ and qualification extension may be very important to much electrical equipment especially passive and frequently inaccessible equipment such as cable system components. Maintenance, surveillance, test, inspection, refurbishment, and condition monitoring techniques are either inappropriate or technically inadequate for many cable system components so most of the requirement options or guidance given are not of help. EQ and item 2 below could be valid and useful bases for establishing assurance of operability in the future.

2) Actions to manage aging degradation need to be described as encompassing such non-physical things as collection and analysis of data. For instance, an assurance of future operability that does not appear to be included as a valid "managing" of aging appropriate for cables in mild environment is to acquire and analyze the significance of past operating data. There are a vast number of related or duplicate components in a given nuclear plant, other nuclear or fossil plants, and other utility or industrial installations. The sheer number and variety of installations operating well over very long periods of time can contribute to high confidence level for 60 plus years service provided access can be found to reasonable service records and current failures are competently assessed for aging related causes.

3) There is a total lack of emphasis of the safety importance of common cause failures as an important factor in considering the assessment or managing of aging. I have understood that this has been a major concern in both deterministic or PRA safety analyses. Should it not be noted as highly important to either understanding or managing aging degradation? I believe so. This also brings into focus the importance of differentiating between requirements appropriate for equipment in harsh versus mild environments; again,

not found in the Ruling or Supplemental Information.

4) The Ruling omits any reference to failures which may challenge safety systems. This is noted in the Supplemental nformation (top left corner of Federal Register, p. 29049). Should it not properly be included in the definition of SSC's important to license renewal?

5) I believe latitude should be incorporated in the Ruling (or Regulatory Guide?) to prioritize certain systems or equipment as more vitally critical to safety in order to make economically feasible the option of costly but needed design improvements and change outs to overcome unresolved potential weaknesses that have or could result in common cause failures.

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