

ENGINEERING EXPERIMENT STATION

GEORGIA INSTITUTE OF TECHNOLOGY • ATLANTA, GEORGIA 30332

13 December 1976

MEMORANDUM

To: Members of Working Group No. 1

From: Fred L. Cain, Chairman of WG-1 *F. L. C.*

Subject: Review of Literature on Peak Power Effects

All of you are aware that Working Group 1 (WG-1) is responsible for coming up with a rationale for modifying the ANSI C95.1-1974 Safety Standard relative to peak power effects. The first task in deriving this rationale is to conduct an exhaustive literature search. Because several new members have recently joined WG-1 and because we all are in the initial step of the literature search, I have decided to include four attachments with this memorandum to provide background information so that everyone can get a quick start from the same level.

The four attachments are essentially self explanatory. Attachment #1 is an August memorandum that I sent to members of WG-1, which was very small at that time. The first two paragraphs of Attachment #1 should give you some insight into our immediate mission. Attachment #2 is the handout that Ed Hunt distributed to the Chairmen of the various working groups at the June 1976 meeting at Cherry Hill, New Jersey. Note that Ed's handout has several appendixes; in particular, Appendix 2 is entitled "Key Concepts". This particular appendix has been updated and is now entitled "Key Descriptors". The updated Key Descriptors handout, which was distributed at the meeting in Amherst, Mass. in October, is included as Attachment #3 under this memorandum. Finally, Attachment #4 is included to inform you of the various members who are participating in Working Group 1.

The procedure that WG-1 will follow for conducting the literature and reliability assessment is outlined as follows.

(1) Initial Culling of Unrelated Articles

Ed Hunt will send to me a complete bibliography of experimental and empirical literature on non-ionizing EMR bioeffects and related topics. I will take the responsibility to cull the articles that do not apply to peak power effects. The initial criteria will not be excessively restrictive, and any information pertaining to modulated fields or high-power effects, for example, will be retained and forwarded to WG-1 members for subsequent review of the entire article.

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(2) A Second Check on Culling of Article

To add credibility to the culling process, a second review of the entire bibliography will be performed to verify as much as possible that no pertinent material inadvertently has been overlooked. This review will be performed by an individual of another organization whose background is different. This second culling, however, does not have to be performed immediately after the first cull.

(3) Distribution of Selected Items for Review

Articles that appear to have potential applicability to peak power effects, after the first cull has been performed, will be mailed to members of WG-1 according to the following procedure. As the Chairman receives the lists of items for potential review from Ed Hunt, two applicable items will be sent to each member of WG-1 (except for Dr. R. H. Lovely who will extend to us his biological expertise in evaluating the biological interpretability and cogency of the articles) until each member has had the opportunity for review. The names of WG-1 members will be arranged in alphabetical order. After the cycle among the members has been made, it will be repeated until all applicable items are exhausted. After each member receives the item for review, it will be his responsibility to acquire a copy of the full article for review. If after obtaining a copy of the full article the member feels that he is not sufficiently familiar with the matter to assess it, he should send (1) the full article to the Chairman along with a statement that he is not qualified and (2) a recommendation of another individual to make the assessment.

(4) Reliability Assessment

A public record of how the reliability of each article was determined must be kept. The assessments should be performed in accordance with the procedure outlined by Ed Hunt (see Attachment #2 of this memorandum) and the Key Descriptors (see Attachment #3 of this memorandum). A written record must be kept to show what each article does or does not contain relative to both the procedure outlined by Ed Hunt and the Key Descriptors. Although this method of assessment appears reasonable for a trial implementation, changes and additions are likely as we gain experience. A large part of the reliability assessment lies with the ability and experience of the reviewer. The general guidelines and specific items to look for in each article can be identified by referring to the above information, but the burden of the assessment and the validity of the assessment rests with the reviewer. As previously indicated, Dr. Lovely has volunteered his services to assist in interpreting the biological aspects as well as its cogency.

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I plan to start mailing out the articles for review in January 1977. As soon as you have assessed each article, please send your results to me. Also, please let me know if you have any suggestions for improving the reliability assessment procedure. As most of you know, a report by the Chairman to the C95.4 Subcommittee is expected at the MTT Symposium in June 1977 in San Diego, California. Your cooperation will be appreciated.

cc: A. W. Guy, Chairman C95.4