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| **Reported by (Name):** | **Geoffrey S. Ibbott, Ph.D.** |
| **Organization:**  | **International Electrotechnical Commission, Subcommittee 62C, US Technical Advisory Group** |
| **Position Title:** | **Technical Advisor to US National Committee and Chair of TAG** |
| **Activity:** | **TAG meeting** |
| **Meeting Dates:** | **12/7/2018** |
| **Meeting Location:** | **AAPM Headquarter, Alexandria, VA** |
| **Payment $:** | **Travel reimbursement for AAPM representatives G. Ibbott and N. Soni** |
| **Reasons for Attending or not Attending** | **Attended to chair meeting and participate in discussion** |
| **Issues from Previous Meetings or Year:** | **Whether certain Grade C Site Tests called for by the linac safety standard IEC 60601-2-1 can realistically be done in a clinic.** |
| **General Description of Activities of the Organization and/or Meeting:** | **The US TAG advises the US National Committee on how to comment and vote on draft IEC standards produced by subcommittee 62C and its working groups.** |
| **Issues for AAPM:** | **Educating AAPM members about the meaning of compliance tests that are specified by IEC standards and must be performed in the clinic.** |
| **Budget Request ($):** | **Included in the WGIEC budget** |

Report of Meeting

US Technical Advisory Group (TAG) to IEC Subcommittee 62C, Working Group 1

Held at AAPM Headquarters, Alexandria, VA

December 6, 2018

In attendance on site: N. Soni, A. Purwar, N. Schupp, J. Collins, M. Noll, A. Cohen, G. Ibbott (Chair)

Attending by GoToMeeting: F. Bova, P. Biggs, S. Dieterich, M. Moyers, T. Steinberg, R. Wu, S. Sutlief, J. Allen, A. Bhullar.

Purpose of this meeting: Discussion of the draft 4th edition of IEC 60601-2-1, aka the Linac Safety Standard. In particular, the inclusion of Grade C Site Tests was to be addressed.

The agenda for this meeting:

1. Introductions

The participants introduced themselves. Of the 16 participants, 9 were clinical physicists, 6 were industry representatives, and one was a representative from the FDA.

1. Explanation of the purpose of the meeting

Ibbott explained that the goal of the meeting was to review the inclusion of Grade C Site Tests, including several specific tests that had been identified as problematic by several of the industry representatives.

1. Explanation of Type Tests, Site Tests, and the different Grades

Ibbott explained briefly. Other members contributed to the discussion.

1. Discussion of the philosophy of Site Tests

Ibbott explained that these are tests to be done on site, on each piece of equipment, generally as part of acceptance testing. Type tests, on the other hand, are done by the manufacturer on one representative piece of equipment of each type.

1. Review of specific Grade C Site Tests

The following clauses were reviewed, and the outcome of the discussion is shown:

1. 201.10.101.1.2, Dose monitoring systems: The Grade C Site Test will be converted to a Grade C Type Test and a new Grade A Site Test will be added to require that a description of the interlocks and their redundancy, as well as the results of the Type Test. The requirement will be revised to include a requirement for monitoring the ion chamber power supply.
2. 201.10.101.1.3, Radiation detectors: This requirement is relevant as some modern treatment machines move the monitor chambers. Will clarify that test only applies when chambers can be moved.
3. 201.10.101.1.5, Termination of irradiation: Will revise as per 201.10.101.1.2.
4. 201.10.101.1.6, Monitoring of distribution of dose: Will keep site test. Especially relevant for lilacs with bending magnets. For straight-through machines, already have Type Test.
5. 201.10.101.1.8/9/10/13, Monitoring of gantry, MLC, couch, accessories: Agreed that artificially manipulating one encoder to test the other is not meaningful. Could address by displaying signals of both encoders in service mode to demonstrate that they remain in coincidence through 360° rotation. Site Test Grade A to provide user information about design and Type Testing.
6. 201.10.101.1.17/18, Termination of irradiation: Recommend addressing as per 201.10.101.1.2.
7. 201.10.101.5.3, Deviation of beam characteristics: Recommend addressing as per 201.10.101.1.2.
8. 201.10.101.5.4, Accuracy of mechanical r/o: Recommend addressing as per 201.10.101.1.2.
9. 201.10.101.5.5, Accuracy of dose: Recommend addressing as per 201.10.101.1.2.
10. 201.10.101.3.2.2, Position of BLD for electron irradiation: May require further discussion. Recommend addressing as per 201.10.101.1.2 when jaw position is set automatically when electron applicator is attached. Add statement that if jaws must be set manually, this Site Test Grade C can be changed to Grade B.
11. 201.10.101.3.5, Leakage radiation under fault conditions: Recommend addressing as per 201.10.101.1.2.
12. 201.10.101.5.1, Verification and selection of treatment parameters: This is already a Type Test so no change is needed.
13. Conclusion of meeting.

Having concluded the business for with the meeting had been convened, the meeting was adjourned.

Respectfully submitted,

Geoffrey S. Ibbott, Ph.D.