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Dossier 330007-9108-520
SCC 1003-15/1034

Mr. Aslam Ibrahim,
Radiation Physics Specialist
Canadian Nuclear Safety Commission
3484 Limebank Road
Ottawa, Ontario
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Dear Mr. Ibrahim,

Re: CLAS Proficiency Testing by Traceability for Ionizing Radiation

CLAS has reviewed the results of the proficiency testing by traceability for ionizing radiation performed by Canadian Nuclear Safety Commission (CNSC). The CNSC source data was CNSC calibration reports # 01110-00 and 01111-00 dated 16 January 2019 and 30 January 2019 for a Exradin A6 ion chamber, serial # XQ091261, with Standard Imaging MAX-4000 electrometer, serial # F100052.

MSS subsequently calibrated this instrument. The MSS source data was NRC calibration report IRS-2019-2790 dated 14 January 2019.

The Normalized Error (E_n), as defined in ISO Guide 43, paragraph A2.1.4 e) is used by CLAS to assess the degree of agreement between the measurements obtained by the reference laboratory and the measurement obtained by an accredited laboratory. It is defined as follows:

$$E_n = \frac{x - X}{\sqrt{U_{lab}^2 + U_{ref}^2}}$$

Where 'X' is the reference value, 'x' is the laboratory's value, U_{lab} is the expanded uncertainty of the laboratory's result (from the laboratory's accredited scope) and U_{ref} is the expanded uncertainty of the reference laboratory's assigned value.

This analysis is designed to produce three conclusions:

- The first is that the measurement results are completely in agreement with the scope of accreditation, this is the case when $|En| \leq 0.5$
- The second is that the results are in doubt and that additional investigation is necessary. When no assignable causes are identified the results are accepted. This is the case when $0.5 < |En| \leq 1$
- The third is that the results are not in agreement with the accredited or proposed scope and the verification must be repeated or the scope revised. The evaluation process continues until CLAS is satisfied with the results of the evaluation. This is the case when $|En| > 1$

The normalized errors for all measurements made by CNSC are less than 0.5. No action needs to be taken by your laboratory.

If you wish to have further discussions on this matter, please contact me at 613-993-9662. You may also contact me by email at philip.blanchard@nrc-cnrc.gc.ca.

Yours sincerely,

Philip Blanchard

Philip Blanchard
CLAS Technical Advisor

cc: Jeffery Russell, Leader, Assessment Services, CLAS