SOUTH AFRICAN NATIONAL ACCREDITATION SYSTEM

SPECIALIST TECHNICAL COMMITTEE MEETING:
IONIZING RADIATION METROLOGY

Minutes of the Meeting held at the NLA Building, Corner of Gen. van Ryneveld Street & De Havilland Crescent, Persequor Park, Lynnwood, Pretoria on Wednesday, 13 October 2010 at 09:00

PRESENT:

Mr N Tayler  
SANAS, FM. Acting Chairman
Ms G Mare  
SABS Chairman
Mr Eljo Smit  
DoH
Mr A Mofokeng  
NECSA
Ms M Mamabolo  
SABS
Mr TV Kgati  
NECSA
Mr S Thema  
SANAS - Assessor
Mr E Smit  
SANAS - Scribe

GUEST:

Ms H Hendriksz  
SABS
Mr TM Ramashidzha  
NMiSA
Mr S Jozela  
NMiSA

APOLOGY:

Mr S Sidney  
NLA
Mrs H Badenhorst  
NLA
Mr D van der Walt  
Protea Survey
Mr T Badenhorst  
Protea Survey
Mr M Britton  
NECSA
Mr C Kros  
NECSA
Dr J Mostert  
NECSA
Mr F Beeslaar  
NECSA
Mr N Treebus  
Private
Mrs Z Msimang  
NMiSA

1. OPENING AND WELCOME

The Chairman opened the meeting and welcomed those present.

2. Confirmation of Chair Person
The SANAS Field Manager: Calibration, Neville Tayler was standing in for the previous Dr Jaco Mostert who could no longer fulfill his obligations due to workload. The term for the Chair needs to be renewed and the Chair highlighted the workload. Germa Mare from SABS indicated her willingness to serve as Chair for the next 2-years and was elected unopposed.

Congratulations to Germa and we wish her everything of the best for her term as Chair.

3. APOLOGIES
Apologies noted on the attendance register.

4. ATTENDANCE REGISTER
All persons present signed the attendance register.

5. FINALISATION of AGENDA
7.1 Measurement Uncertainty in the Radiation Field - NECSA
7.2 Calibration of the Calibration Radiation Track - NECSA

6 MATTERS ARISING FROM THE PREVIOUS MINUTES
6.1 (6.2) 5-Year Audit Plan
The audit programme for 2010, Contamination Monitor was briefly discussed. Three (3) Labs is participating. The audit is still in progress, two (2) of the Labs completed their measurements and submitted their results. The third Lab is in process of finalising their results and plans to submit their data by the end of October 2010.

NMiSA indicated that they plan to finalise their report before the end of 2010.

NECSA indicated that the audit protocol with regards to the instrument adjustment was not clear and after some discussion the STC requested all participants to give feedback and suggestions to the audit co-ordinator (NMiSA) to improve the audit protocol.

The protocol must include a standardised report format template (spreadsheet) to ensure that all participants report in the same format. The audit protocol must include:
1. clear instructions on what must be measured,
2. clearly indicate parameter/s which may not be adjusted, and supply the actual value/s to be used for those parameters.
3. standardised report format template (spreadsheet),
4. a requirement to issue a full certificate and
5. a detailed estimation of uncertainty of measurement to be submitted.

The STC updated the 5-Year Audit Plan to include 2015, please see Appendix 1 attached.

Accredited Labs are reminded of the requirements of R 48 - Proficiency Testing Requirements for Calibration Laboratories and in particular section 4.4 for Labs to prepare their own activity plan to cover their scope of accreditation.

The STC requested NMiSA to prepare a quotation for the 2011 audit and submit the quotation to SANAS by 01 April 2011.
6.2 (6.3) Training

Users of Soil Density Meters

The department of Health (DoH – the Regulator) questioned the type of training referred to; SANAS indicated that both Safety and Calibration training is required.

One of the issues linked to the calibration training is the traceability of Soil Density Meters to national or inter-national standards of measure satisfying legal requirements.

After a brief discussion the STC decided to let the matter stand over until the next meeting.

6.3 (6.4) TR 18-01 - CRITERIA FOR LABORATORY ACCREDITATION IN THE FIELD OF RADIATION DOSIMETRY FOR RADIATION MONITORING EQUIPMENT

The Chair of the WG Sam Thema reported that the WG planned to meet but received information from NMiSA that the Institute of Atomic Energy (IAE) is in the process of updating their documents which will be published early 2011.

The proposal from Mr Hans Bjerke (Norwegian Radiation Protection Authority - Section Dosimetry and Medical Applications) regarding the use of the unit “R”.

After a brief discussion the STC decided to ask the TR 18 WG to include the proposal from Mr Hans Bjerke in the review of TR 18. The WG must also take note of R 79 - Requirements for the Issue of SANAS Calibration Certificates and particular section 5.13.3 regarding the use of none SI-units.

The WG will continue with the review of TR 18 and will circulate the finalised TR 18 for comments to the STC members.

If need be TR 18 will be finalised at the next STC meeting

The Working Group (WG) remains the same:
Sam Thema - SANAS (Chair), Marius Ramashidzha - NMiSA, Jaco Mostert, Charles Kros & Victor Kgati – NECSA, and Mildred Mamabolo – SABS.

6.4 (6.5) Traceability provided by NMiSA

NMiSA will report back to the committee on the traceability provided by NMiSA. In general there was no change since the previous STC meeting of 16 October 2009.

DoH raised their concern over the calibration and traceability of instruments in the Diagnostic X-Ray field (medical) which appears to be taking a very long time (± 5-years?)

SANAS requested DoH to forward their concerns formally to SANAS who will take it up at the next Metrology Advisory Meeting at NMiSA planned for 20 October 2010 to try and expedite the process.
6.5 (7.1) **Accreditation of Soil Density Gauges**

SANAS briefly explained the application and use of Soil Density Gauges in the Road and Civil Construction industries.

The traceable calibration of Soil Density Gauges is currently not to SI-units and it is uncertain if it will stand in a court of law if challenged in South Africa.

In the interim period a Working Group (WG) is to be formed consisting of SANAS, NLA, NMiSA, DoH, SANRAL as well as the Suppliers and Users of Soil Density Meters to decide on the way forward on traceability calibration of Soil Density Meters to national or inter-national standards of measure satisfying legal requirements.

The SANAS Field Manager: Calibration, Neville Tayler indicated that he is willing co-ordinate this activity and report back at the next STC.

6.6. (7.2) **Accreditation of Laboratories to Calibrate On-site Installed Contamination Monitors**

Necsa gave feedback on their On-site calibration work of Installed Contamination Monitors and their progress for accreditation.

Necsa reported that they are finalising their Management system and plan to apply for a scope extension for On-site early in 2011.

6.7 (7.3) **Neutron Calibration Facility in South Africa**

NMiSA reported that the upgrade to the Neutron facility is almost finalised, the only outstanding item is the software programming.

NMiSA to report back on the progress with the upgrade at the next STC

NECSA requested that the issue of the Neutron Calibration Facility be added to the agenda of the Advisory Metrology Panel.

Necsa undertake to forward their concern to SANAS before 20 October 2010

6.8 (8.1) **Update of CVs, F 18 & F 20 forms**

STC members are reminded to submit an updated CV (recently dated), a copy of their qualifications (if changed) and F 18 & F 20 every 2-years. This is an accreditation requirement for STC membership and all information will be maintained in confidence by the SANAS Quality Manager.

SANAS will contact the STC committee members on an individual basis to update their information
7. **New Items**

7.1 **Measurement Uncertainty in the Radiation Field**

Necsa identified a need for a specific Uncertainty Course for Radiation and proposed that a Radiation specific course be considered. A Radiation specific course will be of benefit to all stakeholders in this field not only to the Calibration Labs.

SABS supported the proposal.

After some discussion the STC decided to:

1. support NECSA's proposal for a Radiation specific Uncertainty course.
2. that a 1-day workshop be arranged for the Accredited Labs, NLA, SANAS and Experts (Dr J Mostert and Charles Kros)
3. that the workshop must also be used to look at the content of a Radiation specific Uncertainty course

Necsa to co-ordinate the workshop and give feedback on the progress and planning to the Chair before the end of 2010.

**NECSA**

03 December 2010

7.2 **Calibration of the Calibration Radiation Track**

NECSA's Ionisation chamber is currently out of order and it will be costly to return to service. Currently each accredited Laboratories have their own chamber.

Necsa proposed that as an alternative that one (1) chamber be acknowledged as the reference chamber for traceability purposes.

After some discussion the STC requested Necsa to formalise their proposal to NMiSA with a copy to the STC.

NMiSA will take the matter up with their management in the meantime.

**Necsa**

03 December 2010

**NMiSA**

8. **GENERAL**

8.1 **Metrologist Registration Scheme**

SANAS no longer administrate the Certificate of Competence (CoC) as this task has been taken over by the NLA. [www.nla.org.za](http://www.nla.org.za) see MetCert

The NLA has finalised their formal recognition of metrologists through the Metrologist Registration Scheme. Currently the scheme does not cater for Radiation Metrologists as no training or practical criteria is in place.

SABS indicated that TUT used to provide a 6-months course, Health Physics 1, which was used for training Radiation staff at SABS.

DoH indicated that the Freestate University offer a Medical Physicist degree course. The Steve Biko hospital (Pta) also offers a Medical Physicist course.

NMiSA indicate that Wits University offer a Radiation Protection course, ± 2-week duration.

SANAS request the STC to forward any suggestions, proposals or information to Field Manager: Calibration, Neville Tayler [nevillet@sanas.co.za](mailto:nevillet@sanas.co.za) before Friday, 15 October 2010 for discussion with the NLA.

**SANAS**

14 October 2010
8.2 NECSA informed the STC that Mr Mike Britton will not attend the STC as a member in future but as a guest due to a change in his position at NECSA

8.3 SABS thanked SANAS for making funds available for the audit artefact

8.4 STC members are reminded of the 2010 Test & Measurement Conference & Workshop at Champagne Sports Resort, Central Drakensberg over the period 08 to 10 November 2010

8.2 The Chairman closed the meeting at 12:00; date of the next meeting will be forwarded to committee members. Provisionally planned for 14 October 2010 at the NLA office.

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CHAIRMAN                                       DATE
Appendix 1

Ionizing Radiation Metrology Audit Programme

The audit program was updated to include provision for 2015.

<table>
<thead>
<tr>
<th>Year</th>
<th>Artefact</th>
<th>Measurements</th>
<th>Measurement Points</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010</td>
<td>Contamination Monitor (Nuclear Enterprise Electra 1A)</td>
<td>2π Efficiency Surface Activity Response (SAR)</td>
<td>Artefact to be supplied by SABS</td>
<td></td>
</tr>
<tr>
<td>2011</td>
<td>Electronic personnel dosimeter (Siemens EPD)</td>
<td>Personnel dose equivalent</td>
<td>Artefact to be supplied by NECSA</td>
<td></td>
</tr>
<tr>
<td>2012</td>
<td>Non-ionisation chamber type survey meter (Nuclear Enterprise Electra GM 1A)</td>
<td>Ambient dose equivalent rate</td>
<td>0 μSv/h to 100 mSv/hr 1 Measurement point – Am-241 15 Measurement point – Cs-137 Artefact to be supplied by NECSA</td>
<td></td>
</tr>
<tr>
<td>2013</td>
<td>Non-ionisation chamber type survey meter (Nuclear Enterprise PDM1)</td>
<td>Ambient dose equivalent rate</td>
<td>0 to 300 μSv/hr 0 to 3 mSv/hr 0 to 30 Sv/hr 3 Measurement in each range plus Am-241 Artefact to be supplied by NECSA</td>
<td></td>
</tr>
<tr>
<td>2014</td>
<td>Contamination Monitor (Nuclear Enterprise Electra 1A)</td>
<td>2π Efficiency Surface Activity Response (SAR)</td>
<td>Artefact to be supplied by SABS</td>
<td></td>
</tr>
<tr>
<td>2015</td>
<td>Electronic personnel dosimeter (Siemens / Thermo EPD)</td>
<td>Personnel dose equivalent</td>
<td>Artefact to be supplied by NECSA</td>
<td></td>
</tr>
</tbody>
</table>

Last update: 13 October 2010