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**BUREAU OF INDIAN STANDARDS**

**MINUTES**

**30th MEETING OF NUCLEAR ENERGY FOR PEACEFUL**

**APPLICATIONS SECTIONAL COMMITTEE, CHD 30**

**Mode:** Virtual Meeting

**Time, Day, and Date: 03:00 PM**, **Monday, 11 November 2024**

**E-mail:** [chd30@bis.org.in](mailto:chd30@bis.org.in)

**Chairperson:** Dr. D K Aswal, Director, Health, Safety & Environment Group, BARC

**Member Secretary:** Mr. Pushpendra Kumar, Sc-C/Deputy Director, CHD, BIS

**MEMBERS PRESENT**

1. Dr. D. K. Aswal, BARC, Mumbai, **Chairperson**
2. Shri Basuki Baral, Atomic Energy Regulatory Board, Mumbai
3. Shri N. Khandelwal, Atomic Energy Regulatory Board, Mumbai
4. Shri. Jaydeb Mandal, Atomic Energy Regulatory Board, Mumbai
5. Shri T S Sunilkumar, Atomic Minerals Directorate for Exploration and Research, Hyderabad
6. Shri B G Shinde, Directorate General of Quality Assurance, New Delhi
7. Dr. Rohit Mehra, National Institute of Technology, Jalandhar
8. Dr. B. K. Sapra, Bhabha Atomic Research Centre, Mumbai
9. Ms. Vibha Hari, Nuclear Power Corporation of India Ltd., Mumbai
10. Dr. B. R. Mishra, Indian Rare Earths Ltd. Research Centre, Mumbai
11. Dr. P. K. Tamrakar, Uranium Corporation of India Ltd., Jharkhand
12. Shri Bhaskar Pandit, In Personal Capacity
13. Dr. H.J.Pant, Bhabha Atomic Research Centre, Mumbai
14. Dr. Ritu Raj Upreti, Tata Memorial Center (Hospital), Mumbai
15. Dr. A Jha, Tata Memorial Center (Hospital), Mumbai
16. Dr. Sudhirsinh Vala, Institute For Plasma Research, Gandhinagar

**ITEM 0 OPENING OF THE MEETING**

**0.1 Welcome of the Chairman and Members by Bureau of Indian Standards**

On behalf of BIS, Member Secretary, CHD 30, welcomed the Chairperson Dr. D K Aswal, BARC, Mumbai, and all the committee members to the 30th meeting of the Sectional Committee, CHD 30. He also provided an overview of the significant agenda items that were presented for consideration.

**0.2 Opening remarks by Chairman, CHD 30**

Dr. D.K. Aswal, Chairperson, welcomed the members to the 30th meeting of the Sectional Committee, CHD 30. In his address, he highlighted the critical role of this committee in setting standards for nuclear power, particularly in light of the Government of India's 2024 budget announcement permitting private investment in Small Modular Reactors (SMRs).

He emphasized the pivotal role of NPCIL as the sole nuclear energy producer in the country and the significance of organizations like UCIL, IREL, NFC, BARC, and IGCAR in ensuring uniformity and quality in standards. Dr. Aswal further noted that the Department of Atomic Energy (DAE) has proactively established a standardization cell, acknowledging the need for developing a substantial number of standards to support the sector's growth.

Concluding his remarks, Dr. Aswal expressed optimism for productive discussions on the agenda items and underscored the importance of collaborative efforts in achieving the committee's objectives.

**ITEM 1 CONFIRMATION OF THE MINUTES OF PREVIOUS MEETING**

The Committee confirmed the minutes of the 29th meeting of Nuclear Energy for Peaceful Applications sectional Committee CHD 30 held on 15-05-2024 circulated vide our ref CHD 30/A-2.29 on 31-05-2024. Since, no comments were received on the circulated minutes.

**ITEM 2 SCOPE AND COMPOSITION OF CHD 30, CHD 30 : WP 1, WP 2, WP 3, WP 4**

**2.1**. During the review of the scope of CHD 30, it was observed that the area of nuclear medicine is currently not addressed, despite significant developments in this field. Dr. Rohit Mehra highlighted that several companies are developing pocket dosimeters and low-dose measurement devices, underscoring the importance of expanding the scope to include these advancements.

However, Dr. Sapra informed the committee that this area may be more appropriately handled by the MHD department of BIS, where there is a dedicated committee, MHD 15, focusing on "Electromedical, Diagnostic Imaging, and Radiotherapy Equipment." Additionally, the Member Secretary noted that under the scope of WP 04, a working group has been constituted to address healthcare applications, which would encompass nuclear medicine. During the formulation of WP 04, the scope of CHD 30 was reviewed and found to adequately cover healthcare applications, with no modification required at that time.

In light of the above discussions, it was decided that the scope of the committee will be further reviewed by Dr. B.K. Sapra, Dr. H.J. Pant, and members from TMC (Dr. Rituraj & Dr. Ashish). These members were tasked with examining whether any modification to the scope is necessary. Additionally, the Member Secretary will confirm with the MHD department whether they are working on the nuclear medicine field to prevent any duplication of work.

Based on the recommendations from these members, appropriate changes will be proposed for CHD 30 approval if required.

The current scope of the committee is given below;

***“Sectional Committee Scope:*** *To formulate Indian Standards for Nuclear Energy (for peaceful applications), for terminology, units and symbols, specifications in the field such as: - Materials for nuclear services (radioactive & non-radioactive), methods of sampling and test for physical, chemical and isotopic analysis of various materials, Specifications for nuclear grade chemicals. - Radiological protection - Specifications for personal protective equipment’s, individual monitoring, area & personal monitoring devices & their calibration. - Nuclear energy including nuclear fuel cycle & technology, reactor technology & technology related to application of ionizing radiations. - Safety and environment surveillance in all the plants using and/or producing ionizing radiations.”*

**Liaison: ISO TC- 85 (P):** Nuclear Energy, Nuclear Technologies, and Radiological Protection **ISO TC- 85 SC2 (P):** Radiological protection **ISO TC- 85 SC- 5 (P):** Nuclear Installations, Processes and Technologies **ISO TC- 85 SC- 6 (P):** Reactor Technology **ISO TC- 147 SC- 3 (P):** Radioactivity Measurements.

**2.2 Composition of the Working Panels (WPs) and its working groups (WGs)**

**2.2.1** Considering the importance of ECIL, Hyderabad, and BRIT, Mumbai, the Chair expressed concern about the low participation of these organizations in the committee’s activities. The Chair emphasized that their involvement is crucial, given the significance of their contributions to the field. It was proposed that a communication be sent to the respective authorities of these organizations, reporting the lack of participation from their members and urging them to ensure active involvement in future meetings. If required, the organizations should update their nominations to reflect active participation.

The member from AERB, Mumbai who was present at the meeting, assured the committee that they would actively participate in future discussions and activities. The updated composition of the committee is given below for the committee reference:

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**2.2.3** The committee acknowledged the progress regarding the willingness and nomination of experts from organizations co-opted in the previous meeting. It was noted that IPR, Gandhinagar, had successfully nominated an expert, while two organizations, Raja Ramanna Centre for Advanced Technology (RRCAT), Indore, and Institute of Physics (IP), Bhubaneswar, had not responded.

The committee reviewed the role and area of expertise of these organizations. The Chair informed the committee that RRCAT and IP are primarily involved in theoretical research and may not possess the specific expertise required for the committee's work. Based on the Chairperson's views, the committee agreed that it would be more appropriate to withdraw the co-option of these organizations.

Dr. H.J. Pant and Dr. Bhaskar Pandit informed the committee that he would reach out to the concerned authority at the Indian Nuclear Society to request the nomination of a suitable expert from the organization to participate in the committee's activities.

**2.3** The committee reviewed the composition of all four working panels and found them satisfactory. However, for Working Panel (WP) 02, it was noted that Dr. S.K. Jha's superannuation from BARC is scheduled for November 2024. Considering this, the committee decided to appoint Dr. Aditi C. Patra, BARC, as the new Convener of WP 02.

Additionally, it was decided to remove Dr. S.K. Jha's representation from relevant positions in light of his upcoming retirement.The current working panel’s composition is given at Annex I-B, I-C, I-D, I-E.



**2.3.1** The committee acknowledged the significant contributions of Dr. H.J. Pant as the Convener of WP 04. Considering his expertise and active involvement, the committee accepted his request to continue as the Convener of WP 04 and his representation in CHD 30 in a personal capacity.

**2.4 Co- Option request received**

The co-option request received from M/s Crimson Energy Experts Pvt Ltd via email to the BIS Secretariat was presented for the committee's consideration. After a thorough review of the company's scope of involvement and activities related to nuclear energy, the committee decided to initially co-opt M/s Crimson Energy Experts Pvt Ltd into WP 3.

The committee further agreed that, based on their contributions to WP 3, their membership may be upgraded to the CHD 30 Sectional Committee at a later stage, if required.

**ITEM 3 MEETING OF WORKING PANEL SINCE THE LAST MEETING OF CHD 30**

**3.1 17th Working Panel meeting of CHD 30 : WP 01, WP 02, WP 03, & WP 04**

The committee reviewed the status of working panel meetings and requested the conveners of the working panels (WPs) to convene panel meetings periodically to discuss the subjects under development.

**ITEM 4 DRAFT STANDARDS/AMENDMENT UNDER PRINTING/PUBLISHED**

**4.1 Indian Standard on ‘Monitoring and internal dose assessment for Plutonium.**

The committee has acknowledged the new Indian Standard **IS 18636:2024**, on “***Monitoring and Internal Dose Assessment for Plutonium”*** and the Chairperson has extended congratulations to the committee members for their dedication and contributions to the revision process.

**4.2 Indian Standard on “Glove box handling for radioactive substance”**

The committee has acknowledged the new Indian Standard IS 18605 :2024, on “***Glove Box Handling for Radioactive Substances”*** and the Chairperson has extended congratulations to the committee members for their dedication and contributions to the revision process.

**ITEM 5 DRAFT STANDARDS/ AMENDMENTS FOR APPROVAL FOR WIDE CIRCULATION (WC) AND UNDER WC**

**5.1 [WP 01] Harmonization of Indian Standard with ISO TC 85 standards**

The Committee noted the progress of the harmonization of Indian Standard with ISO TC 85 standards, as reviewed WP 01 and approved by the committee in the previous meeting.

**5.2 [WP 02] Doc. CHD 30 (24903) Measurement of radioactivity in the environment-air: radon-222 Part 4 Integrated measurement method for determining average activity concentration using personal passive dosimeter**

The Committee reviewed the subject and concurred with the Chairperson's view that test method standards should comprehensively cover all techniques, while a separate product standard could be developed specifically for Personal Passive Dosimeters based on Solid-State Nuclear Track Detector (SSNTD). This product standard would include detailed physical, mechanical, chemical, and other relevant product requirements.

Consequently, the Committee decided to adopt ISO 11665 Part 4, which encompasses all techniques for measuring the average activity concentration of Radon-222 using personal passive sampling and delayed analysis dosimeters, instead of developing an indigenous standard. As a result, the currently circulated document DOC 30 (24903) under wide circulation will be withdrawn, and a new document for the adoption of ISO 11665 Part 4 will be initiated and circulated for a period of two months.

Additionally, the development of a new Indian Standard on Personal Passive Dosimeters will be undertaken by Working Panel WP 02, ensuring the inclusion of all safety and performance-related aspects of the product.

**5.3 [WP 02] ISO 11665-6 Measurement of radioactivity in the environment-Air: radon-222- Part 6 Spot measurement methods of the activity concentration**

In line with Agenda Item 5.2, the committee decided to adopt ISO 11665 Part 6, which comprehensively covers all techniques for spot measurement of activity concentration of Radon-222 by spot measurement, instead of developing an indigenous standard. Accordingly, the committee resolved to initiate the adoption of ISO 11665 Part 6 as an Indian Standard by sending the document for wide circulation for a period of two months to solicit public comments.

Additionally, the development of a new Indian Standard on **Liquid Scintillation Cell** will be undertaken by Working Panel WP 02, ensuring the inclusion of all safety and performance-related aspects of the product.

**5.4 [WP 04] Radiometry of Metallic Components and Structures using Sealed Radioactive Sources- Code of Practice**

The committee reviewed the comments received from Mr. Pravin Kumar, BRIT, and observed that the proposed changes are genuine and acceptable. Accordingly, the committee requested Dr. H. J. Pant, the Convener of WP 04, to incorporate the necessary corrections into the document. Once the corrections are made, the document will be finalized and sent for printing.

The document, along with the committee's decision regarding the comments, is enclosed below for reference.



**5.5 [WP 04]** "**Measurement of environmental tritium in natural water for hydrological studies**

The committee reviewed the comments received from Shri Sudhirsinh Vala, IPR and observed that the proposed changes are genuine and acceptable. Accordingly, the committee requested Dr. H. J. Pant, the Convener of WP 04, to incorporate the necessary corrections into the document. Once the corrections are made, the document will be finalized and sent for printing.

The document, along with the committee's decision regarding the comments, is enclosed below for reference.



**ITEM 6 DRAFTS UNDER PREPARATION**

**6.1 [WP 02] New Indian Standard on Land Based Stationary Cobalt-60 Gamma Irradiators**

The committee reviewed the progress on the subject and expressed disappointment over the lack of advancement. Considering the significant time already allocated to WP 2 for this task, the committee observed that the subject would be more appropriately handled by Working Panel (WP 04), led by Dr. H. J. Pant, as it aligns better with its scope. Dr. Pant was requested to review the existing framework document and form a working group of 4-5 members from relevant fields, including Mr. Amit Shrivastava, who initiated the subject.

Shri Jaydeb Mondal from AERB informed the committee about similar standards developed by AERB that could serve as references or be incorporated for harmonization. Consequently, the committee requested Dr. H.J. Pant to review these existing documents from AERB and other relevant organizations before proceeding further. It was emphasized that the regulations must be harmonized to ensure seamless implementation in the future and to avoid any potential contradictions.

**ITEM 7 NEW WORK ITEM**

**7.1 [WP 03] New work item proposal on “Probabilistic Risk Assessment of Nuclear Power Plants”**

The committee reviewed the status of the subject, and the convener, Smt. Vibha Hari, informed that she has received nominations from all relevant organizations, including SRESA, which was previously pending. She further informed that the first meeting of the working group has been scheduled for 14 November 2024 to discuss the way forward for initiating the task. The working group members are as follows:

1. **Smt. Vibha Hari**, NPCIL - Convener
2. **Dr. Santhosh V**, Reactor Safety Division, BARC
3. **Smt. Bhawana Meena**, NPCIL
4. **Shri Utkarsh S C**, SO/H, AERB
5. **Mr. Amit Shrivastava**, BRIT (representative of SRESA)

**7.2 Annual Standardization Program of DAE**

The committee reviewed the status of the Annual Standardization Program (ASP) of DAE and urged the conveners to expedite progress on these subjects, emphasizing their importance as priority areas requiring urgent attention. Additionally, the BIS Secretariat was requested to follow up with the Standardization Cell to obtain clarifications on the issues raised by the respective working panels. The details of the Annual Standardization Program, along with the progress status of each subject, are provided below:



**ITEM 8 COMMENTS ON PUBLISHED STANDARDS**

**8.1 Comments on IS 14194 (Part 1) : 2023 “Radionuclides in Environment Samples- Methods of Estimation- Part 1 Gross Beta Activity Measurement (*Third revision*)”**

The committee reviewed the comments and agreed with the Chairperson's suggestion to form a small group comprising two to three members, including Dr. D. Vidya Sagar and Dr. Aditi C. Patra, a member of WP 02. Dr. Aditi C. Patra will serve as the convener of this group.

The group will work in collaboration with Dr. D. Vidya Sagar to discuss the comments in detail, understand the practical challenges faced by users, and propose any necessary modifications to the standard, if required.

**ITEM 9 REVIEW OF INDIAN STANDARDS & HARMONIZATION WITH THE ISO STANDARDS**

**9.1 Standards due for review in the FY 2024-25**

The committee has reviewed the status of **IS 16986**, which was due for review. Based on the current status at ISO and feedback from Dr. Sapra confirming that the standard is up-to-date and does not require any changes, the committee has **reaffirmed the standard**.

**ITEM 10 ACTIVITIES AT ISO**

The committee noted the status of CHD 30 liaison with ISO TCs.

**10.1 Participation at ISO/TC 85, ISO/TC 85/SC 2, ISO TC 85/ SC 5, ISO/ TC 85/SC 6, and ISO/TC 147/SC 3**

The committee reviewed the participation status of nominated experts in ISO TC 85 and its subcommittees, as well as ISO TC 147/SC 3, and aligned with the direction of the DG BIS. It was agreed that experts should be nominated based on the specific projects under development at various stages within ISO rather than being directly assigned to working groups. This approach fosters a sense of responsibility and helps in monitoring the progress of the subjects effectively.

Accordingly, the committee reviewed the list of active projects under ISO across various WGs of ISO TC 85 and its subcommittees and ISO TC 147/SC 3, which had been shared earlier with members to seek their nominations. The list of experts proposed by Dr. B.K. Sapra, the Convener of WP 01, for subjects under development in ISO TC 85/SC 2 WGs was also reviewed and found appropriate. The committee subsequently decided to nominate these experts to the respective working groups within ISO and update their details on the IRD portal of BIS.

Further, the Chair requested members to review the remaining projects, for which no experts have been nominated, and submit names of suitable experts for contribution to ISO within two weeks. This will allow for timely nominations to ISO and updates to the IRD portal.

The committee also reviewed the participation reports submitted by members, as sought by the Member Secretary. It was observed that Dr. Rajiv Ranjan, Shri Rajesh Chaudhary, and Shri Varun Mishra have been attending meetings regularly and effectively presenting India’s standpoint on the relevant subjects. Accordingly, the committee decided to retain these members in WG 3 of ISO TC 85/SC 6 and assign their subjects to the IRD portal.

On the other hand, reports from other members, including Dr. Minal (BARC), Dr. H.K. Patni (BARC), Dr. R.B. Rakesh (BARC), and Dr. Srinivasan (BARC), were found to be general. The committee requested the BIS Secretariat to seek clarification from these members regarding the specific projects under development, as listed in the shared Excel sheet, on which they would like to participate. Nominations will then be made accordingly.

In light of the above, the committee decided to withdraw all currently nominated experts except those proposed by Dr. Sapra and the three members from NPCI. Future nominations will be project-based, focusing on the projects being undertaken at ISO.

To ensure active participation, all nominated members are requested to provide detailed reports on their contributions to the BIS Secretariat. For WG meetings, advance information should be shared with the Secretariat before the meeting, and a report should be submitted post-meeting for records and committee review.

The revised list of nominations in the ISO Global Directory and the updated list of projects under development at ISO are provided below.

 

**10.2 India’s New Work Item proposal at ISO/TC 85/SC 2 on “Monitoring and internal dose assessment for radiation workers handling plutonium**”

The committee reviewed the status of the ISO NP 25190 ballot on "Monitoring and internal dose assessment for radiation workers handling plutonium," which was proposed under ISO TC 85/SC 2. The committee acknowledged the actions taken by the BIS Secretariat, in line with the deliberations of the previous meeting and in consultation with the Chair, to withdraw India’s leadership role on this subject.

The committee ratified the decision to withdraw India’s proposal for leading the development of this standard and expressed its agreement with the steps taken.

**10.3 Overview of New International Relationship Department (IRD), BIS portal for participation at ISO**

The Member Secretary provided an overview of the newly developed IRD portal for managing ISO/IEC-related work and encouraged members to judiciously utilise this platform to enhance efficiency in international standardization efforts.

The committee acknowledged and appreciated BIS's efforts in developing the portal, recognizing its potential to streamline ISO-related activities.

Given the significant role of ISO TC 85 and ISO TC 147/SC 3 in establishing global standards for nuclear applications for peaceful purposes, the committee emphasized the importance of India’s active participation. It highlighted the necessity of raising India's concerns and inputs during the early stages of document development to ensure their consideration in the international standardization process.

Members were urged to carefully review documents circulated under these committees and subcommittees and provide their inputs in a timely manner for submission to ISO through this portal.

**ITEM 11 PROGRAMMEE OF WORK**

The committee noted the information.

**ITEM 12 DATE AND PLACE OF NEXT MEETING**

The committee agreed that the date and location of the next meeting will be decided in consultation with the new Chairperson. Once confirmed, the details will be communicated to all committee members in advance.

**ITEM 13 ANY OTHER BUSINESS**

**13.1 Recommendation for Appointment of next Chairperson of the committee**

The committee acknowledged the clause of general guidelines, which has also been approved by the Chemical Division Council, regarding the term of the Chairperson for CHD-30:

***“Term of Chairman****: The term of Chairperson of the CHD-30 shall be for three years or till his retirement from his or her respective institution/organization which ever is early. The Chairman CHD-30 would be on rotation basis from scientists / engineers of four main nuclear organization in the country respectively 1. BARC, 2. NPCIL 3. AERB 4. IGCAR.”*

The committee further agreed to seek the name of a Chairperson from the CMD of NPCIL, Mumbai, who can serve as the Chairperson of the committee. The Chairperson also emphasized that the communication should specify that the nominated member should ideally have at least three years of service remaining to ensure they can complete a full three-year term.

Additionally, the Chairperson highlighted the critical role of the Chairperson from NPCIL, especially in light of the recent Government of India budget announcement to open private investment in small modular reactors, as well as the global commitment to tripling nuclear power capacity by 2050, as resolved in COP 28.

**13.2 Letter of Appreciation for Chairperson**

The committee acknowledged and expressed sincere appreciation for the invaluable contributions of Dr. D.K. Aswal in advancing standardization efforts in the field of nuclear energy for peaceful applications. His exemplary leadership has been instrumental in shaping the committee's structure, fostering collaboration, and driving key initiatives forward.

In recognition of his outstanding work as Chairperson, the committee decided to issue a letter of appreciation as a token of gratitude for his leadership and dedication.