

# BUREAU OF INDIAN STANDARDS

## Program of Work

### CHD 30 : Nuclear Energy for Peaceful Applications

**Scope:** a) 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 equipments, 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-147 SC-3 (P): Radioactivity measurements ISO TC-85 (P): Nuclear energy, nuclear technologies, and radiological protection ISO TC-85 SC-2 (P): Radiological protection ISO TC-85 SC-5 (P): Nuclear installations, processes and technologies ISO TC-85 SC-6 (P): Reactor technology**

## Published Standards

S.No	IS No.	TITLE	Reaffirm M-Y	No. of Amds	Eqv.
1	IS 11490 : 1985 <span style="color: green;">Reviewed In : 2024</span> Decision taken to Reaffirm and Archive	Methods of radiological test for water	January, 2024	-	
2	IS 14194 (Part 1) : 2023	Radionuclides in environmental samples - Methods of estimation : Part 1 Gross beta activity measurement ( Third Revision )		-	Indigenous
3	IS 14194 (Part 2) : 2022	Radionuclides in environmental samples - Methods of estimation : Part 2 Gross alpha activity measurement (Second Revision)		-	Indigenous
4	IS 14194 (Part 3/Sec 1) : 2024	Radionuclides in environmental samples - Method of estimation : Part 3 Uranium : Sec 1 In water sample (Second Revision)		-	Indigenous
5	IS 14194 (Part 3/Sec 2) : 2024	Radionuclides in environmental samples - Methods of estimation : Part 3 Uranium : Sec 2 Uranium measurement in geological and biological samples		-	Indigenous
6	IS 14194 : 2021	Radionuclides in Environmental Samples - Method of Estimation Part 4 Radium (First Revision )		-	Indigenous
7	IS 14194 (Part 5) :	Radionuclides in environmental	September, 2023	-	Indigenous

	2013 Reviewed In : 2023 Decision taken to Reaffirm and Archive	samples - Methods of estimation: Part 5 Sampling			
8	IS 15810 : 2008 Reviewed In : 2023 Decision taken to Reaffirm and Archive	Lithium pentaborate - Specification	September, 2023	-	Indigenous
9	IS 15837 : 2009 Reviewed In : 2024 Decision taken to Reaffirm and Archive	Anhydrous diboron trioxide - Specification	March, 2024	-	Indigenous
10	IS 15850 : 2009 Reviewed In : 2024 Decision taken to Reaffirm and Archive	Nuclear grade boron carbide - Specification	March, 2024	-	Indigenous
11	IS 15854 : 2009 Reviewed In : 2024 Decision taken to Reaffirm and Archive	Nuclear grade ion-exchange resins - Specification	March, 2024	-	Indigenous
12	IS 16689 : 2018 ISO 6527 : 1982 ISO 6527 : 1982	Nuclear power plants - Reliability data exchange - General guidelines		-	Identical under dual numbering
13	IS 16691 : 2018 ISO 8107 : 1993 Reviewed In : 2023 ISO 8107	Nuclear power plants - Maintainability - Terminology	May, 2023	-	Identical under dual numbering
14	IS 16692 : 2018 ISO 2889 : 2010 Reviewed In : 2023 ISO 2889	Sampling airborne radioactive materials from the stacks and ducts of nuclear facilities	January, 2023	-	Identical under single numbering
15	IS 16693 : 2021 8769 ISO 8769	Reference sources - Calibration of surface contamination monitors - Alpha beta and photon emitters (First Revision)		-	Identical under dual numbering
16	IS 16878 : 2018 ISO/ASTM 51818 : 2013 ISO/ASTM 51818	Practice for dosimetry in an electron beam facility for radiation processing at energies between 80 and 300 ke 5		-	Identical under dual numbering
17	IS 16879 : 2018 ISO/ASTM 51702 : 2013 Reviewed In : 2023 ISO/ASTM 51702 : 2013	Practice for dosimetry in a gamma facility for radiation processing	December, 2023	-	Identical under dual numbering
18	IS 16880 : 2018 ISO/ASTM 51431 : 2005 ISO/ASTM 51431	Practice for dosimetry in electron beam and X-ray (Bremsstrahlung) irradiation facilities for food processing		-	Identical under dual numbering
19	IS 16883 : 2022 ISO 7212 :1986 ISO 7212 :1986	Enclosures for protection against ionizing radiation - Lead shielding units for 50 mm and 100 mm thick wall		-	Identical under dual numbering
20	IS 16884 : 2018	Radiation protection - Apparatus	September, 2023	-	Identical under dual

	ISO 3999 : 2004 Reviewed In : 2023 ISO 3999	for industrial gamma radiography - Specifications for performance, design and tests			numbering
21	IS 16885 : 2018 ISO 361 : 1975 Reviewed In : 2023 ISO 361	Basic ionizing radiation symbol	August, 2023	-	Identical under dual numbering
22	IS 16902 (Part 1) : 2023 ISO 12749-1 : 2020 ISO 12749-1 : 2020	Nuclear energy vocabulary : Part 1 general terminology		-	Identical under dual numbering
23	IS 16902 (Part 2) : 2023 ISO 12749-2 : 2022 ISO 12749-2 : 2022	Nuclear energy, nuclear technologies and radiological protection - Vocabulary : Part 2 radiological protection		-	Identical under dual numbering
24	IS 16902 (Part 4) : 2023 ISO 12749-4 : 2015 ISO 12749-4 : 2015	Nuclear energy, nuclear technologies and radiological protection - Vocabulary : Part 4 Dosimetry for radiation processing		-	Identical under dual numbering
25	IS 16902 (Part 5) : 2023 ISO 12749-5 : 2018 ISO 12749-5 : 2018	Nuclear energy, nuclear technologies and radiological protection - Vocabulary : Part 5 Nuclear reactors		-	Identical under dual numbering
26	IS 16902 (Part 6) : 2023 ISO 12749-6: 2020 ISO 12749-6: 2020	Nuclear energy, nuclear technologies and radiological protection - Vocabulary : Part 6 Nuclear medicine		-	Identical under dual numbering
27	IS 16986 : 2020 ISO/ASTM 51261 : 2013 ISO/ASTM 51261 : 2	Practice for Calibration of Routine Dosimetry Systems for Radiation Processing		-	Identical under dual numbering
28	IS 16995 : 2018 ISO 6980-3 : 2006 ISO 6980-3 : 2006	Nuclear energy " Reference beta- particle radiation " Calibration of area and personal dosimeters and the determination of their response as a function of beta radiation energy and angle of incidence		-	Identical under dual numbering
29	IS 17060 : 2018 ISO/ASTM 51939 : 2017 Reviewed In : 2023 ASTM 51939 : 2017	Practice for blood irradiation dosimetry	December, 2023	-	Identical under dual numbering
30	IS 17061 : 2019 ISO/ASTM 52628 : 2013 ISO/ ASTM 52628 : 2020	Practice for dosimetry in radiation processing		-	Identical under dual numbering
31	IS 17062 : 2019 ISO/ASTM 52701 : 2013 Reviewed In : 2024 ISO/ASTM 52701: 2013	Guide for performance characterization of dosimeters and dosimetry systems for use in radiation processing	March, 2024	-	Identical under dual numbering
32	IS 17328 (Part 1) : 2021 ISO 7097-1:2004 ISO 7097-1:2004	Nuclear fuel technology - Determination of uranium : Part 1 Determination of uranium in solutions, uranium hexafluoride		-	Identical under dual numbering

		and solids - Iron (II) reduction/potassium dichromate oxidation titrimetric method			
33	IS 17328 (Part 2) : 2021 ISO 7097-2:2004 ISO 7097-2:2004	Nuclear fuel technology - Determination of uranium : Part 2 Determination of uranium in solutions, uranium hexafluoride and solids - Iron (II) reduction cerium (IV) oxidation titrimetric method		-	Identical under dual numbering
34	IS 17328 (Part 3) : 2021 ISO 7476 :2003 ISO 7476 :2003	Nuclear fuel technology " Determination of uranium : Part 3 Determination of uranium in uranyl nitrate solutions of nuclear grade quality " Gravimetric method		-	Identical under dual numbering
35	IS 17328 (Part 4) : 2021 ISO 8299 :2019 ISO 8299 :2019	Nuclear fuel technology " Determination of uranium : Part 4 Determination of the isotopic and elemental uranium and plutonium concentrations of nuclear materials in nitric acid solutions by thermal-ionization mass spectrometry		-	Identical under dual numbering
36	IS 17329 : 2021 ISO 12183 :2016 ISO 12183 :2016	Nuclear fuel technology - Controlled-potential coulometric assay of plutonium		-	Identical under dual numbering
37	IS 17330 : 2021 ISO 18557 :2017 ISO 18557 :2017	Characterization principles for soils buildings and infrastructures contaminated by radionuclides for remediation purposes		-	Identical under dual numbering
38	IS 17986 (Part 1) : 2023 ISO 4037-1 : 2019 ISO 4037-1 : 2019	Radiological Protection -X and Gamma reference radiation for calibrating dosimeters and doserate meters and for determining their response as a function of photon energy- Part 1 : Radiation characteristics and production methods		-	Identical under dual numbering
39	IS 17986 (Part 2) : 2022 ISO 4037-2 : 2019 ISO 4037-2 : 2019	Radiological protection - X and Gamma reference radiation for calibrating dosimeters and doserate meters and for determining their response as a function of photon energy- Part 2 : Dosimetry for radiation protection over the energy ranges from 8 keV to 1.3 MeV and 4 MeV to 9 MeV		-	Identical under dual numbering
40	IS 17986 (Part 3) : 2022 ISO 4037-3 : 2019 ISO 4037-3 : 2019	Radiological protection - X and Gamma reference radiation for calibrating dosimeters and doserate meters and for determining their response as a function of photon energy- Part 3 : Calibration of area and personal dosimeters and the measurement of their response as a function of energy and angle of incidence.		-	Identical under dual numbering
41	IS 17986 (Part 4) : 2023	Radiological Protection ----X and Gamma reference radiation for		-	Identical under dual numbering

	ISO 4037-4 :2019 ISO 4037-4 :2019	calibrating dosimeters and doserate meters and for determining their response as a function of photon energy : Part 4 Calibration of area and personal dosimeters in low energy X reference radiation fields.			
42	: 2023 ISO 6980-1 : 2022 ISO 6980-1 : 2022	Nuclear energy - Reference beta-particle radiation : Part 1 Methods of production (First Revision)		-	Identical under dual numbering
43	IS 17994 (Part 2) : 2023 ISO 6980-2 : 2022 ISO 6980-2 : 2022	Nuclear energy - Reference beta-particle radiation : Part 2 Calibration fundamentals related to basic quantities characterizing the radiation field		-	Identical under dual numbering
44	IS 17994 (Part 3) : 2023 ISO 6980-3 : 2022 ISO 6980-3 : 2022	Nuclear energy - Reference beta-particle radiation : Part 3 Calibration of area and personal dosimeters and the determination of their response as a function of beta radiation energy and angle of incidence		-	Identical under dual numbering
45	IS 17997 : 2022 ISO 15382 :2015 ISO 15382 :2015	Radiological protection - Procedures for monitoring the dose to the lens of the eye, the skin and the extremities		-	Identical under dual numbering
46	IS 18066 (Part 1) : 2022 ISO 11665-1 : 2019 ISO 11665-1 : 2019	Measurement of radioactivity in the environment - Air radon- 222 : Part 1 Origins of radon and its short-lived decay products and associated measurement methods		-	Identical under dual numbering
47	IS 18066 (Part 3) : 2022 ISO 11665-3 : 2020 ISO 11665-3 : 2020	Measurement of radioactivity in the environment - Air radon-222 : Part 3 Spot measurement method of the potential alpha energy concentration of its short-lived decay products		-	Identical under dual numbering
48	IS 18066 (Part 8) : 2022 ISO 11665-8 : 2019 ISO 11665-8 : 2019	Measurement of radioactivity in the environment - Air : radon-222 : Part 8 Methodologies for initial and additional investigations in buildings		-	Identical under dual numbering
49	IS 18066 (Part 12) : 2023 ISO 11665-12 : 2018 ISO 11665-12 : 2018	Measurement of radioactivity in the environment - Air : radon-222 : Part 12 Determination of the diffusion coefficient in waterproof materials: membrane one-side activity concentration measurement method		-	Identical under dual numbering
50	IS 18066 (Part 13) : 2023 ISO 11665-13 : 2017 ISO 11665-13 : 2017	Measurement of radioactivity in the environment - Air : radon-222 : Part 13 Determination of the diffusion coefficient in waterproof materials: membrane two-side activity concentration test method		-	Identical under dual numbering
51	IS 18067 : 2023 ISO 2919 : 2012 ISO 2919 : 2012	Radiological protection - Sealed radioactive sources - General requirements and classification		-	Identical under dual numbering
52	IS 18068 : 2023 ISO 9978 : 2020	Radiation protection - Sealed sources - Leakage test methods		-	Identical under dual numbering

	ISO 9978 : 2020				
53	IS 18069 (Part 1) : 2023 ISO 8529-1 : 2021 ISO 8529-1 : 2021	Neutron reference radiations fields : Part 1 Characteristics and methods of production		-	Identical under dual numbering
54	IS 18069 (Part 2) : 2023 ISO 8529-2 : 2000 ISO 8529-2 : 2000	Reference neutron radiations Part 2: Calibration fundamentals of radiation protection devices related to the basic quantities characterizing the radiation field		-	Identical under dual numbering
55	IS 18070 : 2023 ISO 29661 : 2012 ISO 29661 : 2012	Reference radiation fields for radiation protection - Definitions and fundamental concepts		-	Identical under dual numbering
56	IS 18111 : 2023 ISO 14146 : 2018 ISO 14146 : 2018	Radiological protection - Criteria and performance limits for the periodic evaluation of dosimetry services		-	Identical under dual numbering
57	IS 18251 : 2023 ISO 22127 : 2019 ISO 22127 : 2019	Dosimetry with radiophotoluminescent glass dosimeters for dosimetry audit In Mv X-Ray radiotherapy		-	Identical under dual numbering
58	IS 18282 (Part 1) : 2023 ISO 21909-1 : 2021 ISO 21909-1 : 2021	Passive neutron dosimetry systems Part 1 : Performance and test requirements for personal dosimetry		-	Identical under dual numbering
59	IS 18282 (Part 2) : 2023 ISO 21909-2 : 2021 ISO 21909-2 : 2021	Passive neutron dosimetry systems Part 2 : Methodology and criteria for the qualification of personal dosimetry systems in workplaces		-	Identical under dual numbering
60	IS 18533 (Part 1) : 2024 ISO 13304-1 : 2020 ISO 13304-1 : 2020	Radiological protection - Minimum creiteria for electron paramagnetoc resonance (ERP) spectroscopy for retrospective dosimetry of ionizing radiation Part 1 : General principles		-	Identical under dual numbering
61	IS 18533 (Part 2) : 2024 ISO 13304-2 : 2020 ISO 13304-2 : 2020	Radiological protection - Minimum criteria for electron paramagnetic resonance (ERP) spectroscopy for retrospective dosimetry of ionizing radiation Part 2 : Ex human vivo tooth enamel dosimetry		-	Identical under dual numbering
62	IS 18534 (Part 1) : 2024 ISO 18310-1 : 2017 ISO 18310-1 : 2017	Measurement and prediction of the ambient dose equivalent from patients receiving iodine 131 administration after thyroid ablation Part 1 : During the hospitalization		-	Identical under dual numbering
63	IS 18534 (Part 2) : 2024 ISO 18310-2 : 2021 ISO 18310-2 : 2021	Measurement and prediction of the ambient dose equivalent from patients receiving iodine 131 administration after thyroid ablation Part 2 : External effective dose to the caregivers after release from the hospital		-	Identical under dual numbering
64	IS 18535 : 2024 ISO 21439: 2009 ISO 21439: 2009	Clinical dosimetry - Beta radiation sources for brachytherapy		-	Identical under dual numbering
65	IS 18536 : 2024 ISO 28057: 2019	Clinical dosimetry - Dosimetry with solid thermoluminescence		-	Identical under dual numbering

	ISO 28057: 2019	detectors for photon and electron radiations in radiotherapy		
66	IS 18605 : 2024	Glove box for handling radioactive material - Specification		Indigenous
67	IS 18636 : 2024	Monitoring and internal dose assessment for radiation workers handling plutonium		Indigenous

### Standards under Development

#### Projects Approved

SI. No.	Doc No.	Title
1	CHD 30 (26830)	Practice for using the Fricke Dosimetry System
2	CHD 30 (26831)	Practice for use of a Cerio-Cerous Sulfate Dosimetry System
3	CHD 30 (26832)	Practice for use of a Radiochromic Optical Waveguide Dosimetry System
4	CHD 30 (26833)	Practice for use of Calorimetric Dosimetry Systems for Dose Measurements and Dosimetry System Calibration in Electron Beams
5	CHD 30 (26834)	Guide for Estimation of Measurement Uncertainty in Dosimetry for Radiation Processing
6	CHD 30 (26835)	Guide for Absorbed-Dose Mapping in Radiation Processing Facilities
7	CHD 30 (26836)	Nuclear Energy Nuclear Technologies and Radiological Protection Vocabulary Part 3 Nuclear Installations Processes and Technologies

#### Preliminary Draft Standards

SI. No.	Doc No.	Title
<i>No Records Found</i>		

#### Drafts Standards in WC Stage

SI. No.	Doc No.	Title
<i>No Records Found</i>		

#### Draft Standards Completed WC Stage

SI. No.	Doc No.	Title
1	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
2	CHD 30 (25257)	Measurement of Environmental Tritium in Natural Water
3	CHD 30 (25270)	Radiometry of Metallic Components and Structures using Sealed Radioactive Sources Code of Practice

#### Finalized Draft Indian Standard

SI. No.	Doc No.	Title
<i>No Records Found</i>		

#### Finalized Draft Indian Standards under Print

SI. No.	Doc No.	Title
<i>No Records Found</i>		

**Total Published Standards:57 Total Standards Under development:10**

### Aspect Wise Report

Product : 7  
Code of Practices : 2  
Methods of Test : 50  
Terminology : 6  
Dimensions : 0  
System Standard : 0  
Safety Standard : 1  
Others : 0  
Service Specification : 0  
Process Specification : 0  
Unclassified : 0

**Annexure-I :List of Indian Standards Withdrawn/Superseded**

Sl. No.	IS No. & Year	Title
1	IS 17061 : 2022 ISO/ ASTM 52628 : 2020 ISO/TS 24159 : 2022	Practice for Dosimetry in Radiation Processing First Revision

**Annexure-II :List of Indian Product Standards**

Sl. No.	IS No. & Year	Title
1	IS 15810 : 2008 Reviewed In : 2023 Decision taken to Reaffirm and Archive	Lithium pentaborate - Specification
2	IS 15837 : 2009 Reviewed In : 2024 Decision taken to Reaffirm and Archive	Anhydrous diboron trioxide - Specification
3	IS 15850 : 2009 Reviewed In : 2024 Decision taken to Reaffirm and Archive	Nuclear grade boron carbide - Specification
4	IS 15854 : 2009 Reviewed In : 2024 Decision taken to Reaffirm and Archive	Nuclear grade ion-exchange resins - Specification
5	IS 16883 : 2022 ISO 7212 :1986 ISO 21350: 2023	Enclosures for protection against ionizing radiation - Lead shielding units for 50 mm and 100 mm thick wall
6	IS 16884 : 2018 ISO 3999 : 2004 Reviewed In : 2023 ISO 3999	Radiation protection - Apparatus for industrial gamma radiography - Specifications for performance design and tests
7	IS 18605 : 2024	Glove box for handling radioactive material - Specification