DDG (MSC & PR&T) Sectt.

Our Ref: DDG (MSC & PR&T)/1 20 December 2019

Subject: Draft Plan of Training and Research

It is essential to impart need based training at regular intervals to BIS employees to enable them to develop their potential to the maximum and contribute his/her best to the organization. Towards this, a draft Training Plan has been developed for imparting training to all BIS employees.

- 2. It is also envisaged to undertake Action Research in BIS in the areas of Standardization and Conformity Assessment and their related fields.
- 3. A Draft Plan of Training and Research is enclosed.
- 4. All BIS employees are requested to send their suggestions/comments, if any, on the enclosed draft Plan of Training and Research.
- 5. The suggestions/comments should reach NITS (<u>nits@bis.gov.in</u>) by 27 December 2019.

(A.K. Sharma)

Sc.G & DDG (Management System

Certification

Encl: as above & Policy Research & Training)

All BIS Employees

DG – for information please

BUREAU OF INDIAN STANDARDS DDG (TI) SECTT.

DRAFT PLAN OF TRAINING AND RESEARCH

1. PREAMBLE

The National Institute of Training for Standardization (NITS) was set up under the aegis of BIS in 1995 to meet the growing needs and expectations of the industry for quality training in the fields of standardization and conformity assessment. Since then NITS has been organizing various types of training programmes for industry, lab, service sector, government organizations as well as for consumer bodies. NITS has also been organizing various International Training Programmes for Developing Countries of Asia, Africa, Europe and Latin & South America. The programmes are conducted by a team of well-experienced, qualified and trained faculty. This plan shall strive to achieve focused, committed and sustainable training towards human resource growth and development in BIS.

2. OBJECTIVES OF PLAN

The objective of this plan is:

- a) Training for all: Every employee (permanent and on contract basis) has a right to receive need based training at regular intervals to enable him develop his potential to the maximum and contribute his best to the organization.
- b) All efforts will be made to plan and deliver training for all stakeholders (Target Group) of BIS as per their needs and expectations.
- c) This plan shall strive to achieve focused, committed and sustainable training modules towards human resource growth and development. BIS will work towards fulfilment of the following objectives:
 - i) Ensure value addition through training at entry level as well as periodically during subsequent service.

- ii) Enable employees to keep abreast with the latest knowledge and skills and enable them to undertake current and future responsibilities in a more effective manner.
- iii) Make the training job oriented and need based resulting in increased productivity and consumer satisfaction of all stakeholders.
- iv) Institutionalize learning opportunities that supplement work experience.
- v) Integrate organizational and individual developmental needs.
- vi) Make learning one of the fundamental values of the organization.
- vii) Evaluation of training and improvement of modules based on the feedback.
- d) Action research in the field of Standardization and Conformity Assessment
 BIS employees and the technical committee members shall strive to undertake action research in the technology especially in the subjects related to the existing and new standards.

3. TARGET GROUPS

BIS will strive to aim at the following stakeholders (interested parties):

- a) BIS licensees, registered manufacturers including Indian representatives, recognized laboratories and other BIS engaged sub-contractors under conformity assessment.
- b) Common man, consumers, society
- c) Sub-contractors and agencies empaneled by BIS
- d) Standards Developing Organizations and BIS Division Council and technical committee members and members of panel, groups, other committees etc.
- e) Non-licensee manufacturers, PSUs, laboratories, service sector industry
- f) IT sector
- g) Consumer organizations
- h) Customs, Government and State Government departments
- i) Regulators, Ministries of the Government
- j) Ministry and Departments having administrative control of BIS
- k) Students of universities, colleges and schools
- I) Faculty of management and technical institutes

- m) RWAs, NGOs and other societal organizations
- n) BIS employees

EXAMPLES OF TARGET GROUP AND AREA OF TRAINING

Sl.No.	Target Group	Area of Training
1.	BIS licensees, manufacturers, laboratories, Jewellers registered and recognized by BIS	Training in the field of standards, revision and amendment of standards, conformity assessment schemes, certificate courses for quality control personnel, quality engineers, quality professionals and assaying staff/managers, management system, quality control tools, six sigma, laboratory testing etc. BIS Act, Rules and Regulations
2.	Standards Developing Organizations and BIS Division Council and technical committee members and members of panel, groups, other committees	Recognition criteria for SDOs, procedure for standards formulation, international standardization, concept and principles of standardization etc.
3.	Non-licensee manufacturers, PSUs, laboratories, service sector industry, IT sector	Concept and principles of Standardization, Quality, Management Systems, existing and new standards, conformity assessment schemes, certificate courses for quality control personnel, quality engineers, quality professionals and assaying staff/managers, management system, quality control tools, six sigma, laboratory testing, BIS Act, Rules and Regulations
4.	Consumer organizations, common	1

	man, consumers, society, RWAs, NGOs and other societal organizations	on consumer rights, obligations, quality marks, hallmarking of gold and silver, complaint redressal, solid waste management, zero defect, zero effect, quality and
		standardization concepts, product recall
5.	Customs, Government and State Government departments, Regulators, Ministries of the Government	
6.	Students of universities, colleges and schools, faculty of management and technical institutes	1

4. TRAINING AND RESEARCH ADVISORY GROUP

An Advisory Group on training and research is proposed to be established under the Chairmanship of DG BIS with the members to be drawn from the following institutes. The members of the Training and Research Advisory Group will be drawn on the basis of inputs required for the training and action research.

- Lal Bahadur Shastri National Academy of Administration (LBSNAA), Mussoorie
- 2. Leading Research Institutes in India Central Electronics Research Institute, Pilani, Indian Agricultural Research Institute, Central Food Technological Research Institute, Mysore, Automotive Research Association of India, TERI The Energy and Resources Institute, Tata Institute of Fundamental Research etc.
- 3. The Institute of Secretariat Training and Management (ISTM), New Delhi

- 4. National Skill Development Corporation (NSDC), New Delhi
- 5. National Power Training Institute (NPTI), Ministry of Power, New Delhi
- 6. Director of one of the IIMs
- 7. National Institute of Excise and Customs, Faridabad or Income Tax Institute, Nagpur
- 8. MDI, Gurgaon
- 9. Representative from CSIR/National Railway Staff College, Baroda
- 10. Training Institute of the Legal Metrology
- 11. DDG (PR&T) will be the Member-Secretary

The training and research advisory committee will advise on all matters related to training and action research to be undertaken by BIS.

5. INTERNAL BIS COMMITTEE ON TRAINING NEEDS OF EMPLOYEES

- a) BIS internal committee comprising of Activity Head will be established to identify the training needs of employees in different areas. The training will include refresher courses at all levels aligned with promotions and upgradation to higher responsibilities.
- b) Refreshers courses for employees including Auditors meet will be organized at places away from their place of work. Training of Officers in other countries especially by the other leading National Standard Bodies, International Training Institutes will be undertaken.
- c) The training will focus on practical trainings, on the job training, exposure to actual testing, audits, inspection. Training laboratory at Central Laboratory, Sahibabad is envisaged to impart training on actual testing of products.

6. <u>CONSULTING INDUSTRY AND OTHER STAKE HOLDERS -PROACTIVE</u> APPROACH

a) A regular interaction with the licensees, registered organizations, laboratories and other manufacturers, service sectors will be undertaken to know their requirements for training. Letters will regularly be sent to the leading organizations both in large scale and MSME sectors to know their requirements for training. Also ROs/BOs/LPPD to interact with the licensees and laboratories and other industries to determine the training needs.

- b) Training programs for BIS Licensees, registered organizations, laboratories will be organized as subsidized rates. Training programs on Product Standards, test methods, revised Standards, amendments to Standards, Conformities Assessment Schemes, BIS Procedures, guidelines, Regulations, BIS Act, BIS Rules, etc. will be undertaken at subsidized rates.
- c) Guest faculty (Star Personalities) from leading institutes, corporate bodies, government bodies will be invited to deliver talks on regular basis to senior and middle management of BIS.
- d) Training programs in association with State Governments, Ministries and regulatory bodies like, FSSAI will be organized for example for products like tap water, products under mandatory certification, training both for basic service providers, government laboratories, government employees will be undertaken.
- e) Training programs cum consultancy projects will be devised for National Standard bodies and other institutes of developing countries in the area of Standardization and Conformity Assessment for example a project on formulation of Conformity Assessment Schemes and regulations, procedures, product manuals, formulation of standards, laboratories testing, etc.
- f) In collaboration with World Gold Council, certificate courses of 3 days, 7 days and one month will be organized in the field of Hallmarking of Gold.
- g) Similarly, in association with CII, FICCI, and other Industries/Service Sector Associations, training programs will be organized.

7. ASSOCIATION WITH MSME

BIS in association with Ministry of MSME will identify the needs of the medium and small scale industries and service sectors and will impart training tailor made to suit the requirements of MSME units.

8. <u>ENGAGING FACULTY FROM PROFESSIONALS FROM LEADING INSTITUTES/COLLEGES</u>

- a) Faculty from IITs, NITs and other Engineering Institutes especially in the area of Engineering related to training on products and their certification will be engaged especially for the training programs on Certified Quality Control Personnel, Certified Quality Engineers and also in induction and refreshers training for BIS officers.
- b) Faculty from IIMs and other Management Institutes especially in the area of management systems, general management topics, financial management, communication skills, leadership, HR/Establishment related training will be engaged.
- c) Quarterly joint workshops with international organizations, training institutes and national standards bodies will be organized.
- d) Training programs for Non-Scientific cadre including Staff will be devised and conducted to upgrade their knowledge and skills to enable them to equip themselves to hold higher positions and responsibilities.

9. TRAINING FOR STUDENTS

a) Free open training programs for College students to be organized on each fourth Friday of the month at all Regional Offices, Branch Offices, HQs, NITS where conference room/training room/meeting room with capacity of at least 20 is available. A college student having valid Identity Card of Educational Institute undertaking course can walk in or register for such programs. The training program will comprise presentation on BIS Standards, ISI Mark, Products cover under Certification, Registration Schemes for electronic products, Hallmarking and management system (ISO 9001, ISO 14000, Educational Organization Management System, etc.). A workshop/exercise/ group discussion, session shall be organized in such programs.

- b) Subsequently, the free open training programs for school students shall also be arranged.
- c) Students will also be offered specific training programs for example Standards on Food and testing of food products & food hygiene with exposure to actual testing at subsidized rates.

10. TRAINING OF BIS EMPLOYEES

The focus of training initiatives shall be based on the principles of as given below:

a) Group A Employees:

- i) For employees of the level of Heads and above, training initiatives shall be primarily focused on acquisition of conceptual and management skills to help them discharge the supervisory role expected of them in the organization.
- ii) For employees of group A upto the level of Sc.E, a healthy mix of training initiatives to help acquire functional and conceptual skills shall be designed.

b) Group B & C Employees:

i) The primary focus of training initiatives for group B & C employees should be on imparting hands-on functional skills to help discharge their present and future assignments.

- c) Refresher Training These programmes are conducted to refresh the knowledge of the personnel by keeping them abreast of the latest development in their respective fields. This shall be in-house training programme to be organized every four years for two weeks for all BIS employees (see Annexure I).
- d) Special initiatives will be designed at the level where employee moves from one group to another. For example on movement from group C to group B or group B to group A, the focus of training initiatives should be to help impart skills and competence to facilitate shouldering of higher responsibilities in the new role. A training plan and schedule for each level of BIS employees will be devised. For example, QMS (IS/ISO 9001) training for all BIS employees who are graduate and for BIS Scientific Officers, training in following areas will be undertaken:

IQEESO TRAINING

- (i) Product Certification specific product training I
- (ii) Quality Management System including training in six sigma, root cause analysis and other statistical techniques **Q**
- (iii) Environment E
- (iv) Energy Conservation E
- (v) Occupational Health and Safety **SO**

Training for Group C employees (erstwhile Group D and non clerical staff) will also be organized. For example, one such program for these employees "PRERNA" is already being organized by NITS.

- e) General management courses/training being conducted by leading management institutes like IIMs, MDI, FMS etc. will be arranged for BIS employees.
- **f)** All Scientific cadre officers will attend one week long customized training course at an institution of national and international repute once in four years.
- **g)** Monthly lecture series in the name of the founder of BIS will be started.

11. INDUCTION TRAINING FOR BIS EMPLOYEES

- a) Comprehensive Induction training of BIS officers and staff will be organized at the time of their induction. For example, 2 months induction training of Sc. B officers will include one month training at NITS, one week attachment with Standardization activity at HQs, one week attachment with Laboratory, one week exposure to another national standards body and one week for de-briefing session. Training at NITS will include lead assessor courses on management system, laboratory quality management system, specific product related training similar to certified quality control personnel; certified quality engineer training programs, BIS Act, BIS Rules and Regulations, conformity assessment schemes, standardization, product manuals, exposure to product certification inspections, management system audits, on the job training on registration, laboratory testing, participation in technical committee meetings, general management, financial management, Conduct Rules, GFR, soft skills, etc. (see Annex I for typical Induction Training Programme).
- b) Faculty from leading institutes like IITs and IIMs will be engaged during the induction training.
- c) Similarly, 45 days Induction Training will be imparted to other officials (A&F) cadre.

12. TRAINING OF TRAINERS

BIS will develop a pool of trainers by identifying experts from technical committees, BIS, industry and service sector, Government and State Government Departments and imparting them special training on delivery of presentations, lectures etc.

13. <u>DEVELOPMENT OF TRAINING COURSES/MODULES</u>

- a) BIS shall strive to involve leading agencies/experts and/or have understanding/agreement with institutes to develop training courses and modules in the areas of standardization and conformity assessment.
 - a. BIS shall design customized short duration course on standardization conformity assessment and lab services for the industry and trade (both institution based and on-site).

14. ACTION RESEARCH

- a) BIS will collaborate with reputed research institutions to conduct research in relevant fields.
- b) An Eco system for action research will be created under training activity. Action research will be undertaken by BIS officers in the initial stage in the area of Standardization and Conformity Assessment. For example, action research by BIS officers may be undertaken for quality of products, test methods, testing equipment, product manuals (grouping guidelines and SIT), Conformity Assessment schemes (risk based surveillance), say for products like medical devices, Solar panels and equipment, tap water, general consumer products like biscuits, soaps, detergents, cosmetic items, toys, etc. A research committee comprising of BIS officers and Professors from IIT/NITs/Reputed Universities will be established to guide and evaluate the research work. Research papers will be published in reputed journals.
- c) The officers will be granted study leaves, funds for purchase of books, technical generals and will be paid honorarium on completion of the Action Research project. A team of senior BIS officers, representation from industry, members of Divisional Council/Technical Committee and leading institutes will be established to examine and monitor the research undertaken.
- d) Each of the Scientific cadre officers to take up at least one Action Research/Evaluation on impact assessment study in his/her area of interest in two years.

15. TRAINING AND RESEARCH CALENDAR

Every year in the month of March, a training and research calendar will be finalized in consultation with all the Activity Heads based on the inputs from training and research advisory committees, industry and other stakeholders.

16. TRAINING MANAGEMENT – e-BIS

Training function must be IT enabled so that a full fledged IT Management system is installed with interface to all stakeholders, faculty including BIS employees applying for training with a data base of training details of training imparted. This IT enabled system will also include training evaluation and its effectiveness by BIS Top Management and trainee organizations.

17. TRAINING BUDGET

BIS would allocate adequate funds to training and development activities for meeting the stipulated training requirement. BIS as a progressive organization and model employer accepts and appreciates that "Expenditure is not what it costs to train, but what it costs not to train". Thus, the financial commitment towards realization of tenets of training plan shall be treated as investment rather than expenditure.

Annex - I

Proposal for orientation course for new recruits and refresher course for serving scientific cadre officers

Induction Training

Fresh recruits to the grade of Scientist B need a reasonable exposure to the multidimensional activities of BIS, before their induction into the mainstream activities. For holistic grooming and familiarization with the various core activities as well as various support services, the following is proposed:

Two months induction training of Sc. B officers will include one month training at NITS, one week attachment with Standardization activity at HQs, one week attachment with Laboratory, one week exposure to another national standards body and one week for de-briefing session.

The following curricula for the Induction Training programme at NITS (for one month) for the new recruits is proposed:

Title of the program	Duration	Course details	Justification
Introduction to BIS, BIS Act, Rules and Regulations and Conformity Assessment Programs	2 days	 Overview of the Bureau Functioning of the Bureau and its Committees BIS Act, Rules and Regulations and their significance Introduction to the policies and concepts of product certification schemes and various other conformity assessment programs being operated by BIS, as per latest BIS Regulations Introduction to OMPC Quality Control Orders and their implementation Responsibilities of Inspecting officers and Dealing officers 	This will help in understanding of the organizational structure and functions at various levels of the Bureau and with various conformity assessment programs and schemes, like product certification scheme, hallmarking scheme, CRS, FMCS, management system certification scheme, etc.

		1	
Training	3 days	Introduction to product	This will help in
Program on		certification and quality	familiarization with the
Product		assurance practices thru' specific	nuances of product
Certification		case studies of products as per	certification schemes,
		the following discipline – wise	product standards and
		distribution, as far as possible.	their interpretation and
			application, product
		For example:	manuals, SIT and its
			development, MF and its
		Mechanical & Metallurgy – LPG	development, raw material
		Cylinders	control, quality control,
			quality assurance and in -
		Chemical and Chemistry -	house assessment of
		Cement	product conformity,
			handling of customer
		Electrical – PVC Cables	complaints, etc For
			mobile phones, it will help
		Civil – Plywood and Plywood	in familiarization with the
		Products	Registration Scheme,
			product standards and
		Food and Dairy technology and	testing of products thru'
		Microbiology – PDW	study of independent test
			reports.
		Electronics & Communications,	
		Information Technology and	At the end of the course
		Computer Science – Mobile	duration, an exam, specific
		phones (under CRS scheme)	to the case study, has to
			be cleared

Concepts on Standardization and Standardization Practices	4 days	 Introduction to concepts of standardization, like process control, process capability, interoperability, preferred numbers, variety reduction, limits and fits, tolerances, basic standards, etc. Overview of standardization activity of BIS covering aims, principles, types and levels of standardization Various standardization policies 	•
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		and procedures, including the steps involved in standard formulation Structure and functions of the Division Councils and Sectional Committees Conduct of Division Council and Sectional Committee meetings International standardization, Regional standardization, ISO secretariat work and its procedures. One out of these 4 days will be devoted only to ISO Secretariat work and its procedures Witnessing the proceedings of at least one sectional committee meeting is a must	held by BIS. Role and extent of participation of the various stakeholders, i.e. Controlling Ministries of GOI, Regulators, Govt. Departments, R&D Institutions, Academic Institutions, Laboratories, NGOs, etc. in the standard development process will also be explained
Laboratory Management System and Concepts on assessment of product conformity	3 days	 Overview of Testing and Calibration Activity in BIS Introduction to laboratory quality management practices as per IS/ISO/IEC 17025 and its various elements, like proficiency testing, interlab testing, intermediate checks, calibration of equipments, etc. Procedures for assessment of product conformity as per relevant standards Use of CRMs for calibration of equipments Assaying of Gold & silver ornaments Introduction to BIS Laboratory Recognition Scheme and auditing of laboratories One of these 3 days will be devoted for visit to a nearby BIS lab / BIS Recognized OSL for ½ day, as per discipline of officer, for witnessing preparation and testing of samples, usage of CRMs / SRMs, intermediate 	This will help in understanding the principles of laboratory operations and management in accordance with NABL policies and norms. It will also help in familiarization with the process flow of testing of samples from receipt of samples to generation of test report. Policies and procedures for recognizing OSLs under BIS Lab Recognition Scheme will also be impressed upon

checks and calibration of equipments, etc. and remaining	
½ day for visit to a nearby	

LA Course in Quality Management Systems as per IS/ISO 9001	5 days	Introduction to the concepts of quality management system as per IS/ISO 9001	All our certification schemes as well as conformity assessment programs are based on quality management principles of process approach, planning, performance evaluation, improvement, evidence — based decision making and risk — based thinking. Imbibing these concepts will help the new recruits to correlate better while working on various certification schemes and conformity assessment programs. At the end of the course duration, an exam has to be cleared
Support services of BIS	2 days	 Introduction to the functions and significance of various support services of BIS like Vigilance, Legal, Enforcement, CAD, HRD, Training, Publications, PR, etc. Overview of Technical Support Services in BIS, like IT, SPPD, IR&TISD, etc. WTO/TBT Enquiry point — notification authorities and related issues Preventive vigilance Conduct & Leave Rules CCS (CCA) Rules 	This will help in familiarization with the functions which act as peripheral or add — on services to the core activities of BIS

		 GFR Overview of Consumer Protection & Consumer Movement in India 	
On – site training	2 days	One day visit to one of the licensee manufacturing units, located in nearby areas, according to discipline of the officer. Units to be visited, will be selected from the following categories of products: • LPG cylinders • Steel tubes • Cement • Plywood and plywood products • PDW • Transformers • Plastic pipes and plastic products Officers pertaining to the disciplines of Electronics and Communications, IT & Computer Science will be visiting Registration Dept., Hqs for witnessing activities related to CRS	This will help in familiarization with raw material usage and control, manufacturing process, process controls, stage inspections, sampling procedures, in – house laboratory testing, calibration of process control and testing equipments, maintenance of records of process and QC checks and ensuring compliance to the SIT

After completion of these aforesaid courses, all the Sc B trainee officers will have to clear the exam, which will be based on the following course curricula:

- ♣ Introduction to BIS, BIS Act, Rules and Regulations and Conformity Assessment Programs
- Concepts on Standardization and Standardization Practices
- **↓** Laboratory Management System and Concepts on assessment of product conformity
- Support services of BIS
- ♣ On site training

Proposed Refresher Courses

These apart, refresher courses for the serving scientific cadre officers in the level of Sc B to Sc G, is also proposed as follows. These courses may be planned for the officers once every four

years for two weeks. Scheduling of the courses and selection of officers from any particular dept. may be staggered to avoid routine office work getting hampered. This will help the serving officers to stay abreast of the latest developments in activity areas different from where they are posted and will enable them to get into the groove easily once they are placed in a different activity area consequent upon transfer:

Title of the program	Duration	Course details
Conformity Assessment Programs	3 days + 2 days industrial visit	Refresher course on the policies and concepts of various conformity assessment programs as per latest BIS Regulations, including product certification scheme and product specific conformity assessment training
Standardization and Standardization Practices	3 days	Refresher course on standardization and its various policies and procedures, including the steps involved in standard formulation, structure and functions of the Division Councils and Sectional Committees, conduct of Division Council and Sectional Committee meetings, ISO secretariat work and its procedures
Laboratory testing, test methods and sampling	3 days + 2 days visit for witnessing of testing of products	Refresher course on laboratory assessment of product conformity as per relevant standards, which includes test methods, sampling criteria and sampling methods, sample preparation, usage of CRMs / SRMs, calibration of testing equipments and recording of test results. In addition, a refresher session on scheme for recognition of outside laboratories by BIS and product specific testing training

Apart from the refresher course for the scientific cadre officers, as above, LA course in various management systems for these officers, is also proposed as follows:

Name of the course	Duration	Preferred Discipline of the officers eligible for the course
LA course in LQMS as per ISO/IEC 17025	4 days	Officers from all disciplines, posted in labs, who have not yet undergone, including LOA and LOB
LA course in QMS as per IS/ISO 9001 + Training in RMC as per IS 4926	6 (5+1) days	Officers from Civil Engg., who have not yet undergone
LA course in FSMS as per IS/ISO	5 days	Officers from Chemistry, Chemical Engg.,

22000		Microbiology, Food & Dairy Technology & Agricultural Engg., who have not yet undergone
LA course in EnMS as per IS/ISO 50001	5 days	Officers from Electrical Engg., Mechanical Engg. & Metallurgical Engg. who have not yet undergone

LA course in ISMS as per IS/ISO 27000	5 days	Officers from IT, Computer Science and Electronics & Communications Engg., who have not yet undergone
LA course in QMS as per IS/ISO 9001	5 days	All those officers, who have not yet undergone LA course in QMS

For the above courses, officers from any other discipline may also be nominated depending upon the need.

Further, depending on BIS requirements of auditors, officers will be trained in LA courses of 3 days' or 5 days' duration, as applicable, in other management systems, like EMS, OHSMS, SQMS, MDMS, SAMS, RTMS and ABMS.