

35TH ANNUAL REPORT 1981-82

INDIAN STANDARDS INSTITUTION, MANAK BHAVAN

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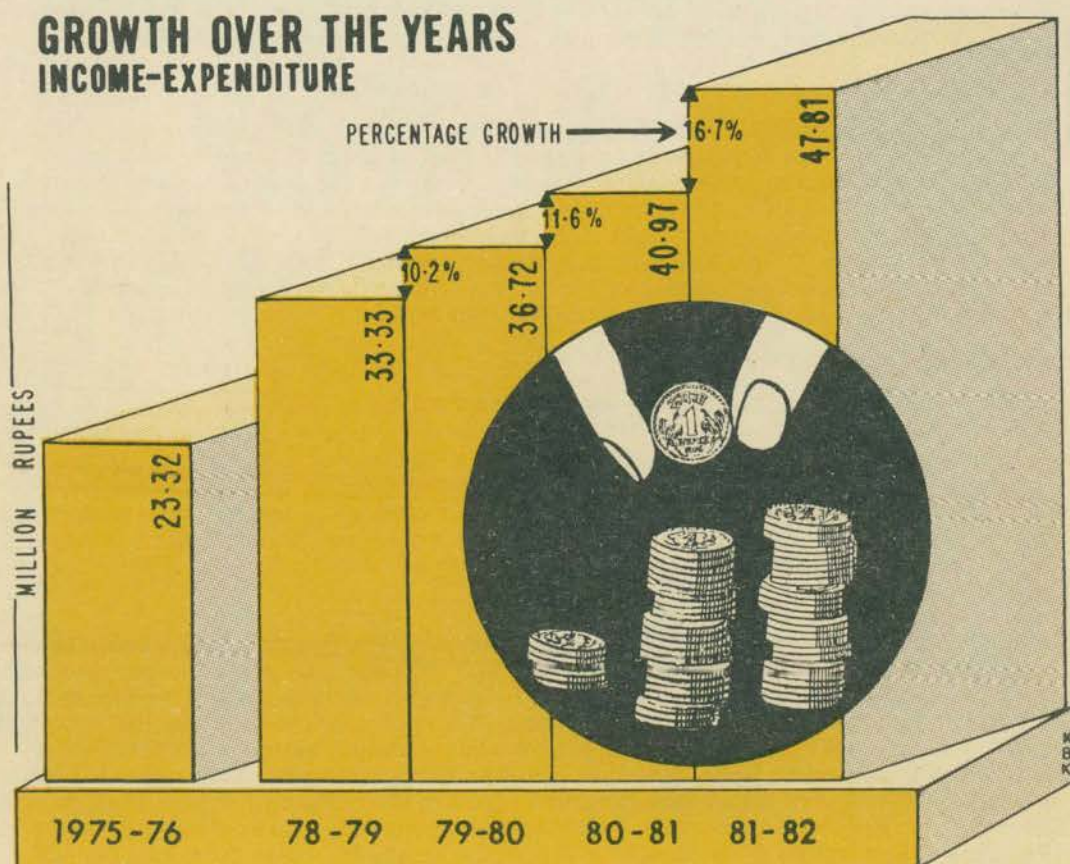
DIRECTOR GENERAL'S REPORT

In the thirty-fifth year of its eventful career, the Indian Standards Institution continued to sustain the tempo of its activity to meet the country's growing demand for standards and quality control expertise. An index to this is provided by the record number of 821 new and revised standards finalized for printing during the year. The progress made by the ISI Certification Marks Scheme is even more spectacular as it was for the first-time that the Certification Marks licences issued during a year crossed the 1 000 mark, the exact figure of the licences granted being 1 007 compared to 978 in the preceding year. Naturally, this increase in the scale of operation also reflected upon the income/expenditure of the Institution which rose to Rs 47.81 million from Rs 40.97 million in the preceding year, thus registering a growth of 16.7 percent.

NEW STANDARDS

A number of new standards made available during the year covered subjects of particular relevance to the contemporary needs of the economy and consumer welfare. For example, the recently published 'IS : 10100-1982 Shrink resistance (or pre-shrunk) requirements of woven fabrics' is expected to form the basis for replacing the foreign-owned 'Sanforized' trade-mark. Similarly, the emerging profession of industrial consultancy in the country will have particular interest in the Indian Standard 'Guidelines for preparation of technical reports : Part II Feasibility reports [IS : 8010 (Part II)-1982]' which provides detailed information on make-up and contents of such reports in one cover. Among the other notable standards, mention may be made of those dealing with permitted colours for use in plastics required for packing of food, sterilization of medical instruments and appliances, electronic speed limiters on heavy vehicles, jewels for watches, assessment and rating of noise level, waxed paper for packing of bread and biscuits, and life testing of digital microcircuits.

Constitution of four new Sectional Committees to undertake formulation of standards in the fields of irrigation equipment; sowing, fertilizer and manure application equipment; farm transport equipment;



and veterinary surgery instruments was another noteworthy development. The Committee on Farm Transport Equipment, set up at the instance of the Union Ministry of Agriculture, will formulate, among other, standards for bullock carts and their components both with pneumatic and wooden wheels. The Electrotechnical Division Council of the Institution set up a specialist panel in the field of agricultural pumps for pinpointing areas for concentration of standardization efforts to ensure availability of pumpsets of improved performance and lower energy consumption.

NEW BUILDINGS

The Northern and Western Regional Offices of the Institution moved into their own and more spacious accommodations at S.A.S. Nagar, Mohali (near Chandigarh) and Andheri, Bombay, respectively, which marks achievement of yet another important landmark in the successful growth of the national standardization activity in the country. The three-storeyed building of the Northern Regional Office has been given to the Institution by the Government of Punjab on lease for 99 years on rent-free basis to make available on-the-spot service to the industry in the region to upgrade the level of its performance through appropriate recourse to programmes of standardization and quality promotion. The building of the Western Regional Office, however, has been constructed as part of the Institution's own capital projects involving an expenditure of Rs 5.4 million of which Rs 4.4 million have been given by the Government of India as grant and the rest raised through contributions from the Governments of Maharashtra and Gujarat and industries in the region. The availability of the greatly increased facilities for testing a large variety of chemical, electrical and mechanical products at the two Regional Offices will come handy for accelerating the pace of quality certification activity in the respective areas.

CERTIFICATION MARKING

The number of operative ISI Certification Marks licences went up to 6 452 covering products conforming to about 900 Indian standards. About 25 percent of these standards relate to items of everyday use of particular interest to consumers.

Among the products coming under the ISI Certification Marks Scheme for the first time, particular mention may be made of power threshers, hydraulic operation tables, insulation resistance testers, intrinsically safe electrical apparatus and circuits, fuel filters for diesel engines, re-refined lubricating oil and graphite crucibles. Items of consumer interest include handloom cotton *lungies*, beltless sanitary napkins, magnetic tapes for sound recording and reproduction, tooth powder, drinking chocolate, liquid shampoo, cast iron *kadahies*, electric toasters and silver-tin dental amalgam.

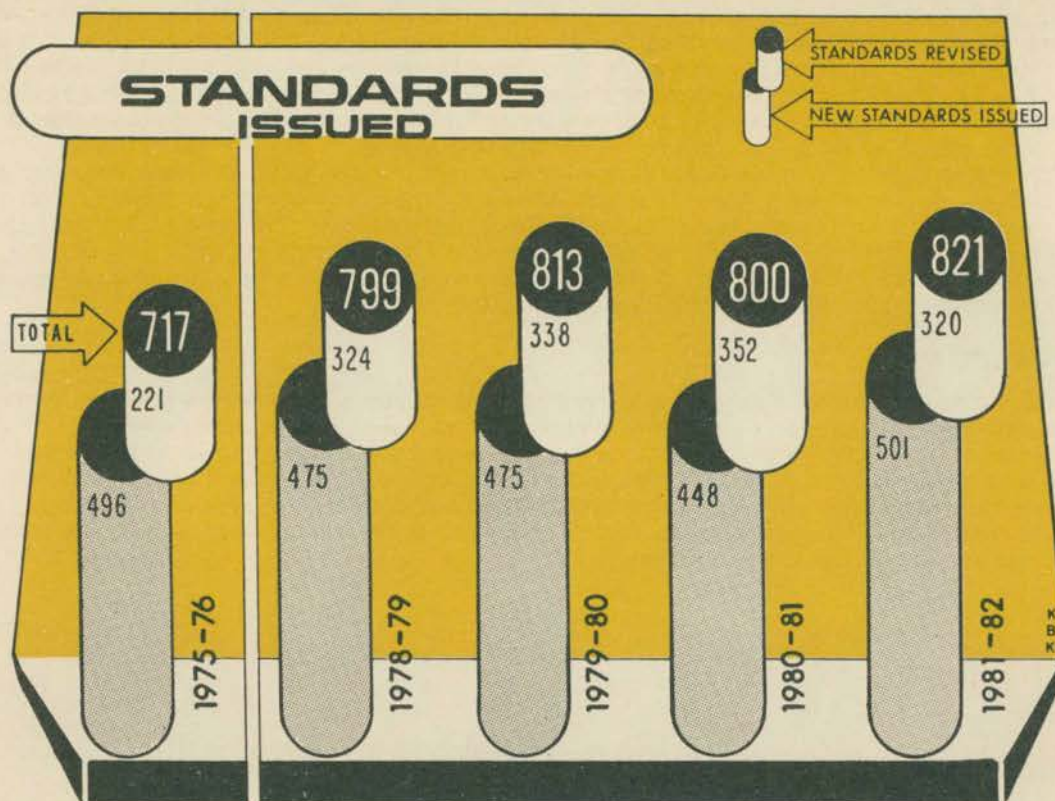
SIXTH FIVE-YEAR PLAN

Adoption of the Sixth Five-Year Plan covering the activities of the Institution during 1980-81 to 1984-85 was another important highlight of the year. The Plan provides for opening of a Central Regional Office of the Institution at Bhopal and Branch Offices in the States of Assam, Himachal Pradesh, and Jammu and Kashmir. Adequate provisions are also made for stimulating the pace of activities both in regard to formulation of new and revised standards and operation of the ISI Certification Marks Scheme. Of the total recurring expenditure of Rs 269.4 million during the plan period, the Institution is expecting to raise Rs 220.1 million from its own resources, such as membership fee, sale of publications, and certification marking fees.

INDIAN STANDARDS CONVENTION

The Nineteenth Indian Standards Convention which met at Madras during 17-22 January 1982 adopted a number of recommendations of far-reaching significance aimed at giving a proper direction to the standardization programmes to keep in step with the contemporary needs of industry and technology. These included proposals for grading of products in Indian standards on the basis of quality, compulsory introduction of ISI Certification Marks Scheme in selected areas for consumer protection, assimilation of the tenets of international standardization for guidance of indigenous industry and application of the principles and techniques of standardization in coming to terms with problems faced by automobile and handloom industries.

The distinguished presence of a number of dignitaries including Rao Birendra Singh, Union Minister of Agriculture, Rural Reconstruction and Civil Supplies, and President ISI who delivered an illuminating Presidential Address and Shri Sadiq Ali, Governor of Tamil Nadu, who inaugurated the proceedings, lent an added stature to the deliberations of the Convention. It was also for the first time that a Convention of ISI had the distinction of having as Chief Guests Mr Henri Durand, President of International Organization for Standardization (ISO), and Mr B. Vaucelle, Director General, *Association Francaise de Normalisation* (AFNOR). The technical delegates taking part in the convention proceedings numbered nearly 600 and comprised leading scientists, engineers, technologists, industrial and business executives, and representatives of the Central and State Governments, organized consumer bodies, etc.



INTERNATIONAL INVOLVEMENT

The Institution continued to be in the forefront of the international standardization movement. A significant development in this regard was the allocation of the secretariat of the ISO Technical Committee for Leather (ISO/TC 120) and its Subcommittee for Tanned Leather (ISO/TC 120/SC 2) to India. India's proposal for the creation of a new ISO Technical Committee for Jute and Jute Products was accepted for member-body enquiry. As an elected member of the ISO council and as a member of PLACO and CERTICO, India contributed significantly to the policies and programmes of ISO both in the technical and administrative work. The Director General, ISI, Dr A. K. Gupta, who is Chairman of the ISO Standing Committee for Development (DEVCO) presided over its 16th meeting held during 18-19 June 1981 in Geneva.

Encouraging progress has also been made in regard to the activity underway for promoting cooperation in the field of standardization, measurements and quality control among the non-aligned countries. A detailed Action Programme for the purpose was drawn up by the specialist Working Group deriving membership from the three coordinating countries of this movement, namely, Cuba, India and Yugoslavia.

The Committee on Fluid Flow Measurement (ISO/TC 113), the Secretariat responsibilities of which rest with India, held its 11th plenary meeting along with the meetings of seven of its Subcommittees during 25 January-5 February 1982 in New Delhi. In addition, the Institution was represented at some of the important meetings of ISO and IEC dealing with subjects of particular significance from the view point of country's industry and trade. These included technical committees and subcommittees formulating standards in regard to items like boiler shells, structural steel sections, spices and condiments, textile testing, rubber, air quality, bicycle components, bone implants, thermal insulation and electrical apparatus for explosive atmosphere.

SUPPORT FOR STANDARDIZATION

It is a matter of gratification that support for the programmes of standardization and quality improvement is visibly on the increase throughout the country. With the additional purchasing power becoming available to a considerable section of people, consumers themselves are placing higher premium on aspects like product quality and performance. An increasing number of organizations and

authorities have come forward in the country to extend patronage to ISI-certified products. During the year, Directorate General of Health Services, Government of India; Directorate of Industries, Government of Andhra Pradesh; Directorates of Agriculture, Governments of Bihar and Himachal Pradesh; Irrigation Department, Government of Rajasthan; and Public Works Department, Government of Jammu and Kashmir issued instructions to agencies under their control to indent for ISI-Marked products to the extent possible. Financial incentives to entrepreneurs to join the fold of the ISI Certification Marks Scheme were extended by the Governments of Rajasthan and Kerala, State Bank of Saurashtra, State Bank of Mysore, Andhra Pradesh Small Industries Development Corporation and Development Commissioner, Small Scale Industries, Government of India. The demand for compulsory certification not only of goods the use of which could involve a hazard to health and safety but also of articles of mass consumption is increasing. All this augurs well for the country as it will go a long way in strengthening the programmes of industrial and economic growth.

ACKNOWLEDGEMENT

In conclusion, a word of appreciation is due to the unstinted support and assistance received by the Institution from various quarters - subscribing members of the Institution, for their financial contributions; committee members for their expert guidance and counsel during the formulation of standards; and various authorities, institutions and organizations in the public and private sectors for their growing involvement with standardization programmes and patronage to certification marking activity. Needless to say, it is this support and cooperation which determines in main the strength of the Institution to meet the demand placed on its services.

FORMULATION OF STANDARDS

During the year, a brisk pace of activity was maintained for formulation of standards including their revision and updating through issue of amendments. The number of sectional committees, subcommittees and panels engaged for the purpose has crossed the mark 2 200 of which 807 held their meetings during the period under review. The number of new and revised Indian standards formulated came to 821 compared to 800 in the preceding year. The number of draft standards circulated for comments came to 741.

The net result was the increase in the number of standards in force from 10 793 as on 31 March 1981 to 11 202 as on 31 March 1982. Amendments were issued to 293 existing Indian standards. Detailed break-up is as follows:

New standards issued during the year	501
Standards revised during the year	320
Standards withdrawn during the year	33
Standards in force as on 31 March 1982	11 202
Cumulative total of standards revised up to 31 March 1982	4 259
Cumulative total of standards withdrawn up to 31 March 1982	533
Standards reprinted	601
Amendments issued	293

Departmentwise progress of work achieved in different fields of standardization is given in Table 1.

AGRICULTURAL AND FOOD PRODUCTS

The Agricultural and Food Products Division Council constituted three new Sectional Committees to undertake development of

standards on priority basis in their respective areas as follows:

AFDC 58 Irrigation Equipment

Hydraulic rams, sprinkler irrigation system, drip irrigation system, etc.

AFDC 59 Sowing, Fertilizer and Manure Application Equipment

Equipment relating to sowing, fertilizer and manure application. Proper application of these inputs can go a long way in improving productivity particularly in dry farming.

AFDC 60 Farm Transport Equipment

Bullock carts fitted with pneumatic or wooden wheels as well as various components of tractor trailers. The Union Ministry of Agriculture is particularly keen that standards on bullock carts and their components are made available expeditiously.

The Division formulated as many as 80 new and revised standards covering such important topics as agricultural machinery, animal feeds, dairy products and equipment, farm drainage system, fishery products, food additives, canned fruits and vegetables, laboratory animals, microbiological analysis and pesticidal formulations.

HANDBOOK OF FOOD ANALYSIS

The handbook is being brought out in 15 parts for providing a comprehensive manual on methods of analysis for various foods. Part I of the handbook covering general methods was issued last year. During the year, another part of the handbook, namely, 'Part XI Dairy products' has been printed.

CHEMICALS

A major highlight of the development of standardization activity in this important sector was the allocation of the secretariat

TABLE 1 RECORD OF TECHNICAL WORK (FOR THE YEAR 1981-82)

Department	No. of Committees	No. of Meetings	New and Revised Standards, Published and Under Print	Amendments to Standards	Drafts Circulated	New Subjects Taken Up
Agricultural and Food Products	151	49	80	30	90	44
Chemicals	242	77	77	15	72	47
Civil Engineering	321	113	102	64	65	23
Consumer Products and Medical Instruments	104	70	70	19	72	66
Electronics and Telecommunication	78	30	95	6	44	9
Electrotechnical	223	72	70	42	70	30
Marine, Cargo Movement and Packaging	105	43	35	—	42	35
Mechanical Engineering	323	127	101	76	103	57
Petroleum, Coal and Related Products	162	44	46	14	49	45
Structural and Metals	314	82	90	17	66	23
Textiles	111	60	50	9	52	—
Miscellaneous	76	40	5	1	16	3
TOTAL	2 210	807	821	293	741	382

responsibility of the ISO Technical Committee for Leather (ISO/TC 120) and its Subcommittee for Tanned Leather (ISO/TC 120/SC 2) to ISI. Previously, the secretariat of these Committees was held by Iran.

During the year, the Chemical Department formulated 42 new and 35 revised standards. Important themes covered by the new standards included ready mixed paints, rhodium salts for electroplating, chlorine tablets, and treatment and disposal of effluents of fertilizer industry. The important standards revised included those dealing with ready mixed paint for road marking, tolerance limits for industrial effluents (general limits), testing of mineral wool thermal insulation, common salt for fish curing, and sampling and microbiological examination of water. Among these, special mention may be made of the following:

IS : 9937-1981 PORTABLE METHANOMETER (ELECTRICAL TYPE)

Portable methanometers are used extensively in coal mines, tunnels, shafts, deep wells, etc, to detect and quantify methane concentrations in the surrounding atmosphere. Great care is indeed needed in their design and manufacture to ensure their intrinsic safety particularly to preclude the possibility of any danger of explosion during their use in any dusty or gassy mine atmosphere.

IS : 9985-1981 SODIUM ALKYL BENZENE SULPHONATE, TECHNICAL

It is an important raw material for manufacture of synthetic detergents including powders, tablets and liquids. It is also used as wetting agent in pesticide formulations.

IS : 9988-1981 WAXED PAPER FOR BREAD AND BISCUITS

The standard will help provide guidance for exercising proper control on the quality of waxed paper used for packing bread and biscuits so that these products of mass consumption reach the consumers without any undue deterioration.

CIVIL ENGINEERING

The Civil Engineering Department formulated 102 new and revised standards, issued amendments to 64 standards and circulated 65 draft standards for comments. Particular mention among these may be made of the following:

IS : 9922-1981 GUIDE FOR SELECTION OF METHOD OF MEASURING FLOW IN OPEN CHANNELS

Provides useful guidance for selection of appropriate method for measurement of flow in open channels taking into account factors like size of the river; place of gauging, like hilly terrain or estuary; and availability of trained personnel.

IS : 9759-1981 GUIDELINES FOR DEWATERING DURING CONSTRUCTION

The standard gives useful guidance for proper dewatering during normal civil construction works other than river valley projects.

IS : 9762-1981 SPECIFICATION FOR POLYETHYLENE FLOATS FOR BALL VALVES

Requirements for ball valves and copper and polyethylene floats for use with the ball were previously covered in 'IS: 1701-1977 Ball valves (horizontal plunger type) including floats for water supply purposes (second revision)'. The need to formulate a separate specification for floats has arisen as these are manufactured and supplied independent of ball valve fitting. Plastic floats being lighter in mass possess improved lifting effort and as such are proving a good substitute for floats made from copper which is both costly and scarce. This specification for polyethylene floats is being issued in the first instance; floats made of other suitable plastic materials will be covered subsequently.

IS : 9872-1981 SPECIFICATION FOR PRECAST CONCRETE SEPTIC TANKS

Precast concrete septic tanks provide an economical means for the disposal of sewage especially in small towns and rural areas. Use of septic tanks conforming to this standard would lead to their production on a mass scale and bring in advantages like lower cost, improved quality and simplified installation which reduces dependence on skilled labour particularly for execution at sites in remote areas.

IS : 10135-1982 CODE OF PRACTICE FOR DRAINAGE SYSTEM FOR GRAVITY DAMS

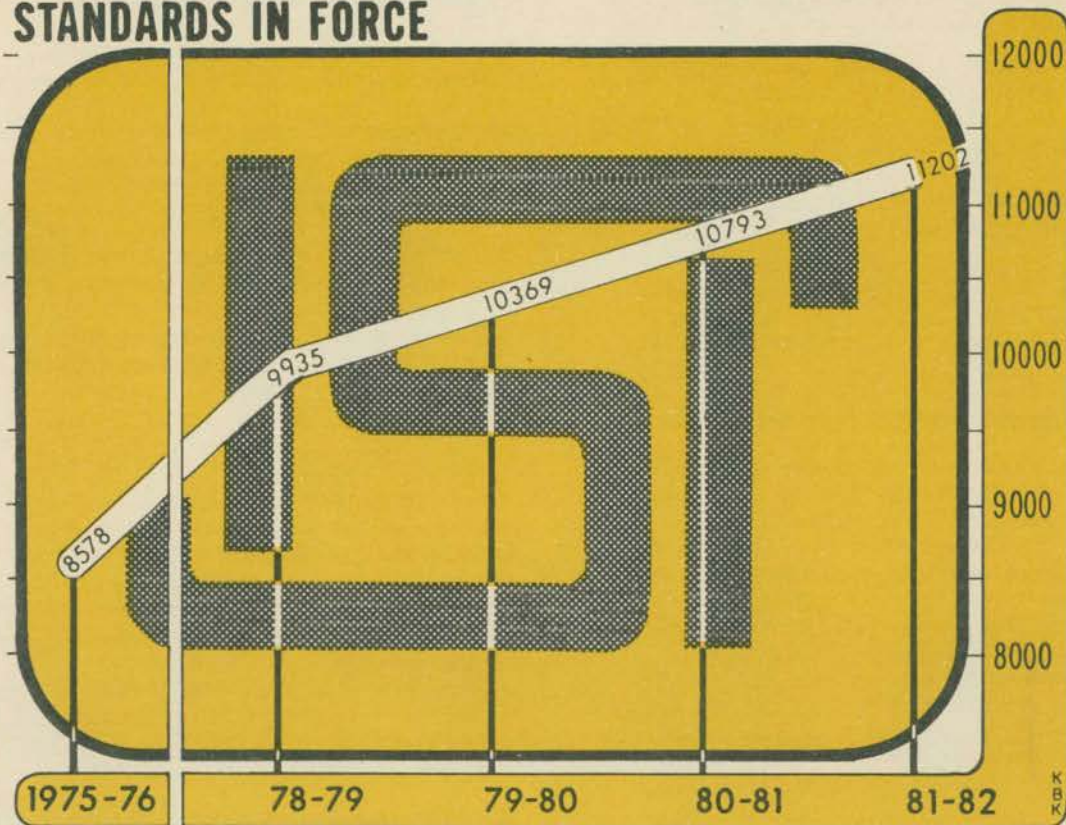
Proper drainage of seepage water inside the body and foundations of a dam is an important factor for ensuring its safety. As such it is important to observe and study the quantum of seepage from various sources individually as well as collectively with respect to data on rainfall, reservoir level, etc, and to take remedial measures in case of abrupt departures from the normal. The prevailing uplift pressures too would bear close watching to assess the adequacy of the drainage provided. The code has, therefore, been developed to give guidance on the general requirements and methods of drainage in and around a gravity dam and its abutments. It does not cover drainage requirements for energy dissipation devices, chutes and training walls.

IS : 10060-1981 CODE OF PRACTICE FOR SUBSURFACE INVESTIGATION FOR POWER HOUSE SITES

The code gives guidance on the type, extent and details of subsurface exploration needed in connection with power houses of the following types:

- a) Hydro-electric power houses (both surface

STANDARDS IN FORCE



and underground power houses), and

b) Thermal and nuclear power houses.

Proper and adequate subsurface investigation is essential to obtain data on characteristics, such as shear strength parameters, bearing capacity of the soil, permeability, water table and soil or rock type classification.

IS : 10067-1982 MATERIAL CONSTANTS IN BUILDING WORKS

The labour and material constants for different items of work in the schedule of rates used by different construction departments display considerable variation. As a result we have the situation where for the same item of work in the same locality different rates are allowed by different departments. This standard, therefore, aims at rationalization of the material constants for different items of building works.

CONSUMER PRODUCTS AND MEDICAL INSTRUMENTS

Constitution of a new Sectional Committee for Veterinary Surgery Instruments (CPDC 33) was a major highlight of the work in this important field. The Committee will develop standards for instruments used in veterinary surgery.

Among the 70 standards formulated/revised

during the year by the Consumer Products and Medical Instruments Department, special mention may be made of the following:

IS : 9748-1981 METALLIC SLIDE FASTENERS (FOR AVIATION PURPOSES)

The standard covers materials, types and sizes, designations, colour fastness and performance requirements, and tests for slide fasteners. Also includes requirements for breaking strength crosswise of the chains and reciprocating movement of the slider under load.

IS : 9848-1981 BRIEFCASES, PLASTIC, MOULDED

Covers requirements for briefcases made of moulded high density polyethylene/acrylo nitrile butadiene styrene/polypropylene/glass reinforced plastics or any other suitable moulded material.

IS : 9927-1981 CLAMP, ANASTAMOSIS, DALE-FEMORAL POPLITEAL PATTERN

The clamp covered by the standard has thin blades with deep spoon-shaped curvature enabling it to be used as an atraumatic partial exclusion clamp. The thinness of the blades near the tip allows adequate space for operation even in small arteries and the thinness of the handle near finger loops produces an almost perfect grip even on diseased and calcified arteries.

IS : 9987-1981 CLAMPS, MULTIPURPOSE, DE-BAKEY'S PATTERN

The standard covers dimensional and other requirements for three sizes of De-Bakey's pattern multipurpose clamps used in cardiovascular surgery.

IS : 10150-1982 GUIDE FOR STERILIZATION OF MEDICAL PRODUCTS

The guide deals with various methods of sterilization including steam sterilization, ionization sterilization and ethylene oxide sterilization. Tests for verifying the sterility of products are also included.

ELECTRONICS AND TELECOMMUNICATION

The Electronics and Telecommunication Division Council (LTDC) held its fifth meeting on 4 March 1982 at New Delhi. The Department of Electronics, it was noted, had a proposal under consideration requiring that while giving an industrial licence for manufacture of any electronic item, it might be stipulated that the manufacturer should produce the item in conformity to the relevant Indian standard(s). Unanimous election of Prof S. Sampath, Director, Indian Institute of Technology, Kanpur and Lt-Gen D. Swaroop, Chief Controller (R&D), Ministry of Defence, as Chairman and Vice-Chairman of the Council for the 3-year term ending 31 December 1984 was another major highlight.

During the period under report, 95 standards were sent for printing, out of which special mention may be made of the following:

IS : 1885 (Part III)-1981 ELECTROTECHNICAL VOCABULARY: PART III DATA PROCESSING

Computers are providing new communication links between technical, administrative, commercial and other related sectors. This vocabulary, which is being formulated in 20 sections (out of which 13 have already been printed), is intended to provide a standardized terminology to overcome problems like a concept being represented by a variety of terms, the same term being used to denote a variety of concepts and lack of precision in the definitions as used currently. The various sections of the vocabulary will cover all the activities from data organization to data communication, equipment technology to computer programming, and data structures to computer graphics.

IS : 9807-1981 LIFE TESTING OF DIGITAL MICROCIRCUITS

Testing of microcircuits under simulated conditions depicting their performance in actual use has assumed particular significance because of the rapid progress achieved by this technology in recent years. This standard gives

procedures for life testing of digital microcircuits suitable for bipolar, MOS and multichip circuits. The test has particular relevance in the context of reliability evaluation.

IS : 9819 (PART I)-1981 SPECIFICATION FOR LINE OUTPUT TRANSFORMERS (EHT) USED WITH TV PICTURE TUBES: PART I GENERAL REQUIREMENTS AND TESTS

This standard fulfils a long-felt need for Indian Standards covering critical components for TV receiver sets. The subsequent parts of this standard would cover detailed requirements of line output transformers for different sizes of picture tubes.

IS : 9858-1981 SAFETY REQUIREMENTS FOR ELECTRONIC MEASURING APPARATUS

Covers important safety aspects relating to personal protection against electric shock, effects of excessive temperature, effects of harmful ionizing and microwave radiation, liberation of poisonous gases and of ultrasonic pressure, effects of implosions and explosions, and spread of fire. The extent to which the safety of an apparatus is dependent upon the matching of its design with installation requirements of the location has also been suitably explained.

IS : 9989-1981 ASSESSMENT OF NOISE WITH RESPECT TO COMMUNITY RESPONSE

The standard, which is intended to be used as a guide to the measurement of the acceptability of noise in communities, suggests methods for measuring and rating of sound levels in residential, industrial and traffic areas with respect to their interference with rest, working efficiency, social activities and tranquillity.

ELECTROTECHNICAL

The Electrotechnical Division Council at its 24th meeting held in New Delhi on 2 December 1981 took note of the adoption of 25°C as referee temperature in place of 27°C by the Electronics and Telecommunication Division Council. As such, the Council constituted a specialist panel to recommend referee temperature to be adopted for electrical equipment. Another Panel was constituted to study the gaps in the standardization activity in the field of agricultural pumps for pinpointing areas for concentration of further efforts to ensure installation of pumpsets with improved efficiency and reliable performance to promote economy in energy consumption. The Council also noted the need for producing 250 V incandescent lamps as 230 V lamps currently available failed frequently in service. The manufacturers were requested to make available sufficient quantities of 250 V lamps and also take steps to educate consumers about the relevant advantages and disadvantages of the two voltage grades.

During the year, the Department formulated 70 new and revised standards, issued 70 draft standards into wide circulation and prepared preliminary draft standards on another 90 themes. Among these, particular mention may be made of the following:

IS : 1175-1981 METHODS FOR GRADING AND CLASSIFICATION OF MUSCOVITE MICA BLOCKS, THINS AND FILMS (First Revision)

In the absence of adoption of electrical classification, the method of visual classification of muscovite mica, despite its subjective nature, is used widely and also forms the basis of export. This revision, therefore, retains classification based on visual tests. In line with the current trade practices, only 11 categories for blocks and thins have been specified compared to 16 in the earlier version.

IS : 2148-1981 FLAMEPROOF ENCLOSURES OF ELECTRICAL APPARATUS (Second Revision)

This standard specifies the constructional features necessary for flameproof enclosures to ensure safety in service and the test requirements which should be met by these enclosures. The important additions made in the second revision include the following:

- a) Special recommendations and tests applicable to flameproof enclosures which may be used in hydrogen atmospheres (Group II C), and

- b) Type tests and routine tests applicable to these enclosures.

Details like flame path and diametral clearance as applicable to different groups of flameproof enclosures have been given separately to facilitate easy reference.

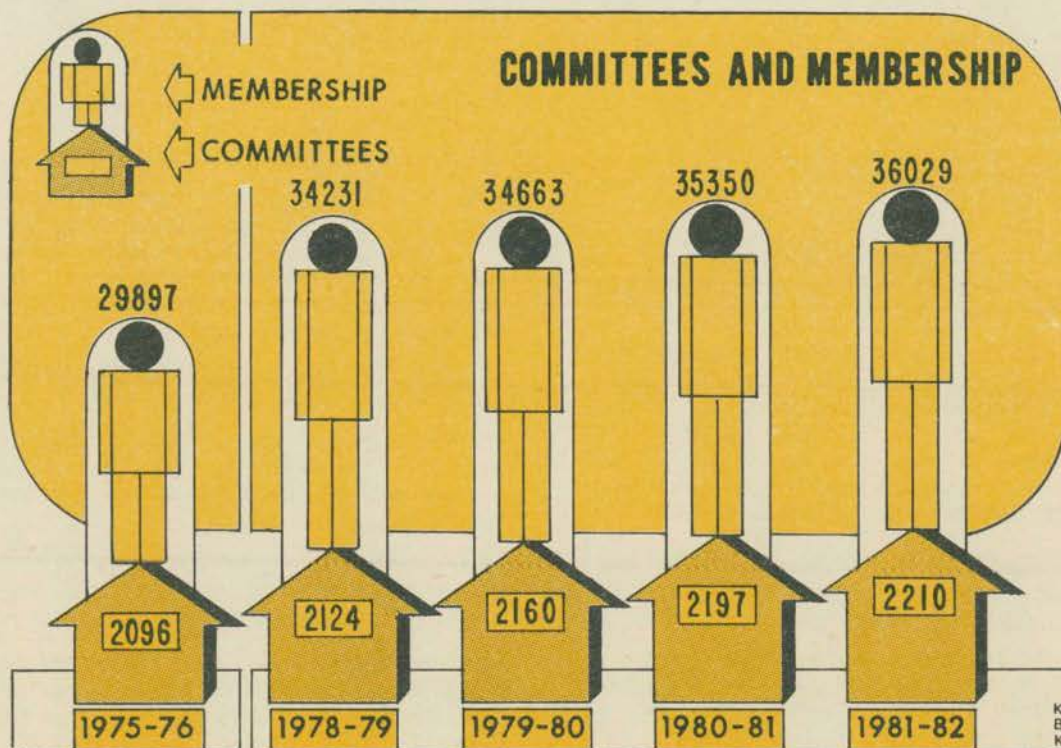
IS : 2834-1981 SHUNT CAPACITORS FOR POWER SYSTEMS (First Revision)

The standard covers the capacitor units and assemblies with accessories to form complete capacitor equipment for connection to ac low, medium and high voltage power systems intended to be used for power factor correction. The present revision has been undertaken to:

- a) include self-healing metalized power capacitors,
- b) provide guidance on handling and disposal of power capacitor with polychlorinated biphenyl (PCB) dielectric, and
- c) update the requirements in line with the latest international practice.

IS : 9919-1981 GUIDE FOR SELECTION AND USE OF CARBON BRUSHES IN ELECTRICAL ROTATING MACHINES

The standard provides guidance for selection and use of different grades of carbon brushes for special applications. Guidance is also provided for conducting different tests before establishing the brush grade for a particular machine.



IS : 10144-1982 ELECTRONIC SPEED LIMITERS FOR DIESEL VEHICLES

Some state governments have made the fitment of electronic speed limiters to certain classes of motor vehicles compulsory in order to meet the safety aspects of rules and regulations made under the *Motor Vehicles Act*. This standard has been prepared in order to help the manufacturers, users and the enforcing authorities to ascertain the performance of these devices.

MARINE, CARGO MOVEMENT AND PACKAGING

The Department formulated 35 new and revised standards, among which particular mention may be made of the following:

IS : 9837-1981 CODE FOR TESTING OF MARINE CENTRIFUGAL OIL PURIFIERS

Prescribes methods of testing and inspection of centrifugal oil purifiers for marine use particularly from the viewpoint of ensuring their performance reliability.

IS : 9881-1981 SPREADERS FOR SERIES 1 C AND 1 CC ISO FREIGHT CONTAINERS

Specifies among others requirements for materials and testing of spreaders for handling freight containers for inter-modal transportation. Use of appropriate spreaders ensures safety during loading and unloading not only of the freight containers which are expensive but also of the personnel.

IS : 9992-1981 ROUND AND RECTANGULAR TINPLATE CANS FOR LIQUID PESTICIDES

Prescribes requirements of round and rectangular cans including performance and lacquer compatibility tests for retail consumer packs.

IS : 10106 (PART I)-1982 PACKAGING CODE: PART I FACTORS AFFECTING THE SELECTION OF PACKAGING

A fundamental document which lays down guiding factors pertaining to the selection of a packaging method for a given product.

The following revisions were issued to incorporate among others the modern practice of identifying quality by alphanumeric system:

IS : 3109-1982 Short link chain, Grade M (40):

Part I Non-calibrated load chain for lifting purposes (*second revision*)

Part II Calibrated load chain for pulley blocks and other lifting appliances (*second revision*)

IS : 5616-1982 Short link chain for lifting

purposes—General conditions of acceptance (*first revision*)

IS : 6215-1982 Short link chain, Grade T (8), non-calibrated for lifting purposes (*first revision*)

IS : 6216-1982 Short link chain, Grade T (8), calibrated for pulley blocks and others lifting appliances (*first revision*)

IS : 6217-1982 Short link chain, Grade S (6), non-calibrated for lifting purposes (*first revision*)

MECHANICAL ENGINEERING

The Department finalized 101 standards for printing, approved 103 draft standards for wide circulation and prepared preliminary draft standards on 103 new themes. Of these, special mention may be made of the following:

IS : 9263 (PART II)-1982 SPECIFICATION FOR HOROLOGICAL JEWELS: PART II TYPES AND DIMENSIONS

The standard rationalizes the dimensions and other requirements of jewels being used by the indigenous watch industry.

DIMENSIONS FOR MODULAR UNITS FOR MACHINE TOOL CONSTRUCTION

Three Indian standards have been brought out covering dimensions for slide units (IS : 9722-1981), multi-spindle heads – casing and input drive shaft dimensions (IS : 9723-1981), and headstock (IS : 9737-1981). The application of these standards will help make available modular machine tool components which provide maximum machine to machine flexibility for users.

IS : 9798-1981 SPECIFICATION FOR LOW PRESSURE REGULATORS FOR USE WITH LIQUEFIED PETROLEUM GAS (LPG) MIXTURES

Low pressure regulators of matching type are required for use with self-closing valves for LPG which have been introduced recently. The standard covers requirements for such regulators to suit the new types of valves to ensure safety during handling of LPG cylinders.

IS : 9999-1981 SPECIFICATION FOR DIESEL LOCOMOTIVES FOR USE IN MINES

The standard lays down specific requirements which would ensure safety in the use of diesel engines in underground mines having hazardous atmospheric conditions.

PERFORMANCE REQUIREMENTS FOR CONSTANT SPEED COMPRESSION IGNITION (DIESEL) ENGINES FOR GENERAL PURPOSES

Two specifications have been issued covering performance requirements of these engines of capacity up to 20 kW (IS : 10001-1981) and above 20 kW (IS : 10002-1981). IS : 10001-1981 is being

extensively used by the industry as well as farmers for agricultural purposes. The standard prescribes the maximum specific fuel consumption (SFC) values with the objective of promoting fuel efficiency. The concept of fuel conservation is also taken care of in IS : 10002-1981.

SPECIFICATIONS FOR PERFORMANCE REQUIREMENTS FOR (a) VARIABLE SPEED COMPRESSION IGNITION (DIESEL) ENGINES FOR AUTOMOTIVE PURPOSES (IS : 10003-1981), and (b) SPARK IGNITION ENGINES FOR AUTOMOTIVE PURPOSES (IS : 10004-1981)

These list tests for determining the general performance and smoke emission levels, which assume importance in the perspective of the need to maintain the purity of the environment.

PETROLEUM, COAL AND RELATED PRODUCTS

The Petroleum, Coal and Related Products Division Council held its fourth meeting in New Delhi on 21 August 1981 under the Chairmanship of Dr D. Banerjee, Managing Director, Escon Consultants Pvt Ltd, Calcutta, who underlined the need to promote the concept of energy conservation through improved management. This could be achieved through more efficient product designs and judicious selection of materials and processing technology.

During this year, 46 standards were processed for publication, of which special mention may be made of the following:

IS : 1448 [P:106]-1981 METHODS OF TEST FOR PETROLEUM AND ITS PRODUCTS: DETERMINATION OF OXIDATION CHARACTERISTICS OF INHIBITED STEAM-TURBINE OIL

Covers method used widely for determining oxidation stability of lubricants (especially those which are prone to water contamination) in the presence of oxygen, water, copper and iron at an elevated temperature.

IS : 9747-1981 ANHYDROUS AMMONIA FOR FERTILIZER USE

Covers quality requirements of ammonia meant for direct application to the soil or as an aqueous solution in conjunction with other nitrogenous fertilizers. The standard would help ensure the quality of ammonia as also the safety in its use.

IS : 9827-1981 SHOE ADHESIVE, NATURAL RUBBER LATEX BASE

The standard aims at cutting down cost in shoe fabrication as the other adhesives used in shoe industry are based on costly synthetic rubber and chemicals.

IS : 9833-1981 PIGMENTS AND COLOURANTS FOR FOOD CONTACT PLASTICS

Lists permitted pigments and colourants for use with plastics coming in contact with foodstuffs, pharmaceuticals and drinking water. The standard, which is based on national legislations in force in various parts of the world as also the latest technical findings, is expected to serve as a guide for plastic converters intending to manufacture food contact plastics.

IS : 9845-1981 METHOD OF ANALYSIS FOR THE DETERMINATION OF OVERALL MIGRATION OF CONSTITUENTS OF PLASTICS MATERIALS

The standard prescribes a simplified method of extraction employing food simulants under standardized test conditions. The standard is of a pioneering nature and is aimed at making available a uniform method of analysis for assessing and ensuring the safety of all types of plastics likely to be used in contact with foodstuffs, pharmaceuticals and drinking water.

IS : 9875-1981 LIPSTICK

The standard which covers coloured lipstick as well as lip-gloss or lip rouge aims at dermatological safety of the product through adequate safeguards on the quality of dyes, colours, pigments and other ingredients used. Tests for microbiological examination and limits for arsenic and lead have been stipulated.

Research and Testing

During the period under review, a number of testing and research investigations were carried out including the following:

- a) Comparative study of Bunsen and Barthel burners for conducting fire resistance test,
- b) Study of the elongation at break values of LDPE films,
- c) Extent of liberation of ammonia from brattice cloth,
- d) Determination of copper (optimum content) as rot-proofing agent in tarpaulin,
- e) Development of a suitable method (gravimetric or volumetric) for determination of zinc in zinc sulphate of agricultural grade, and
- f) Study of the effects of final boiling point of Indian high speed diesel fuels on engine performance.

International Round Robin Tests

A detailed programme of round robin tests is being pursued by ISO/TC 28 Petroleum Products and Lubricants covering the following:

- a) Round Robin Test on Four Ball EP method (Participants: France, India and USA); and

- b) Round Robin Test on oxidation stability of lubricants for rotary oil flooded air compressor (*Participants*: France, India, Italy and Japan).

ISI is coordinating these test programmes as conducted in the country.

STRUCTURAL AND METALS

The Structural and Metals Department finalized 90 new and revised standards for printing, approved 66 draft standards for wide circulation and approved 23 subjects for being taken up on the programme of work. Some of the important subjects covered by the new and revised standards include tubular steel poles for overhead power lines [IS : 2713 (Parts I to III)-1980]; electrically welded steel pipes for water, gas and sewage (IS : 3589-1981); pressure regulators for gas cylinders used in welding, cutting and related processes (IS : 6901-1981); criteria for design of steel bins for storage of bulk materials [IS : 9178 (Part III)-1981]; recommendations for metal arc welding of carbon and carbon manganese steel (IS : 9595-1980); carbon and low alloy steel forgings for fired and unfired pressure vessels (IS : 9683-1980); technical conditions for the supply of hot rolled billets, blooms, slabs and bars for closed die forgings (IS : 9684-1980); high conductivity copper castings (IS : 9805-1981); method for determining life of graphite crucibles (IS : 9929-1981); zircon refractories for glass furnace application (IS : 9930-1981); and aluminium alloy redraw rods for electrical purposes (IS : 9997-1981).

TEXTILES

Out of the 50 standards published by the Textile Department during the year, special mention may be made of the following:

IS : 10100-1982 SHRINK RESISTANCE (OR PRE-SHRUNK) REQUIREMENTS OF WOVEN FABRICS

The specification would warranty the shrinkage or dimensional stability of fabrics, which is of considerable interest to consumers, especially for the tailored fabrics to retain their shape and fit even after repeated washings. The specification would form the basis for replacing the foreign-owned 'Sanforized' trade-mark, hitherto in operation in the country.

IS : 9846-1981 GRADING OF UNCUT INDIAN MESTA

Indian mesta as a substitute for jute fibre is used in considerable quantities by various jute mills in this country. The standard is expected to form the basis for compulsory grading of mesta fibre benefiting both the farmers and the jute mills.

IS : 9886-1981 SPECIFICATION FOR MOSQUITO NETS

The standard will provide useful guidance to military and paramilitary personnel as also the civilians in procuring good quality mosquito nets.

IS : 10055-1982 SPECIFICATION FOR JUTE NEEDLELOOM FELTS

Covers requirements of three grades and seven varieties of jute needleloom felts which are used as cheap cushioning/padding material in place of costly woollen felts.

IS : 9936-1981 GUIDE ON EQUIVALENCE BETWEEN MANILA ROPES AND NYLON POLYESTER AND POLYPROPYLENE ROPES FOR MARINE PURPOSES

The standard prescribes requirements of polyamide, polyester and polypropylene ropes equivalent to different types of manila ropes used in mooring of ships. Necessity for the standard has been felt in view of the increasing use of man-made fibre ropes in place of conventional manila ropes made from imported manila fibre.

EC COMMITTEES

DOCUMENTATION SECTIONAL COMMITTEE, EC 2

The following standards were finalized for printing:

- a) Specification for A6 size microfiche, and
- b) Recommendations for international standard serial numbering (ISSN).

PUBLICATIONS AND GRAPHIC TECHNOLOGY SECTIONAL COMMITTEE, EC 10

The Committee finalized an important standard for printing covering 'Guidelines for preparation of feasibility reports'.

STATISTICS

The Department finalized two Indian standards for printing, namely, 'IS : 1548-1981 Manual on basic principles of lot sampling (*second revision*)' and 'IS : 9990-1981 Glossary of maintenance terms in terotechnology'.

The Department carried out a special study on consumers' complaints in regard to products covered under the ISI Certification Marks Scheme and reported its findings to the Certification Marks Advisory Committee. Routine inspection data collected from a number of licensees were statistically analyzed to review the frequency of testing for urea formaldehyde moulding materials in accordance with IS : 3389-1965.

CERTIFICATION AND QUALITY ASSURANCE

Under the ISI Certification Marks Scheme, 1 007 new licences were issued which covered 375 products. With this, the total number of licences granted since the inception of the Scheme rose to 10 618 from 9 611 at the end of the preceding year. Likewise, the number of Indian standards against which products were certified rose to 1 083 from 1 047 at the end of the last year. Of these, nearly 225 standards relate to items of every day use of particular interest to consumers.

PROGRESS OF THE SCHEME

The total number of operative licences on 31 March 1982 stood at 6 452 as compared to 5 838 last year. Of these, the operation of 593 licences was deferred to enable the licensees to take suitable corrective action. The number of licences in actual operation thus came to 5 859. The industrywise and regionwise break-up is given in Tables 1 and 2 respectively.

During the year, 393 licences lapsed bringing the number of lapsed licences since the inception of the Scheme to 4 166. The reasons for lapse include unsatisfactory performance of the licensee, closure of the licensee's factory, lack of interest of the licensee to continue the manufacture of the product under licence, etc.

CERTIFICATION REVENUE

The certification revenue touched the Rs 26.67 million mark registering a growth of 17.02 percent. The value of the goods certified during

the year is estimated to be of the order of Rs 24 000 million.

SUPERVISION OF OPERATIVE LICENCES

The number of inspections carried out for grant of licences, supervision of the operation of the Scheme by the licensees, etc, is given in Table 3.

NEW PRODUCTS COVERED UNDER THE ISI CERTIFICATION MARKS SCHEME

The items coming for the first time under the ISI Certification Marks Scheme may be broadly classified as under:

- a) *Agricultural and Food Products* — Drinking chocolate, lactometers, pesticides (butachlor EC 50 percent, and mancozeb WDP) and power threshers.
- b) *Chemicals* — Aluminium sulphate, non-ferric; magnesium sulphate (Epsom salts); glassy sodium metaphosphate, technical; liquid shampoo; and welder's brush.
- c) *Construction Materials and Other Civil Engineering Items* — Prestressed concrete poles for overhead power traction and telecommunication lines, dry chemical powder for fire-fighting purposes and non-ferrous metal sliding door bolts.

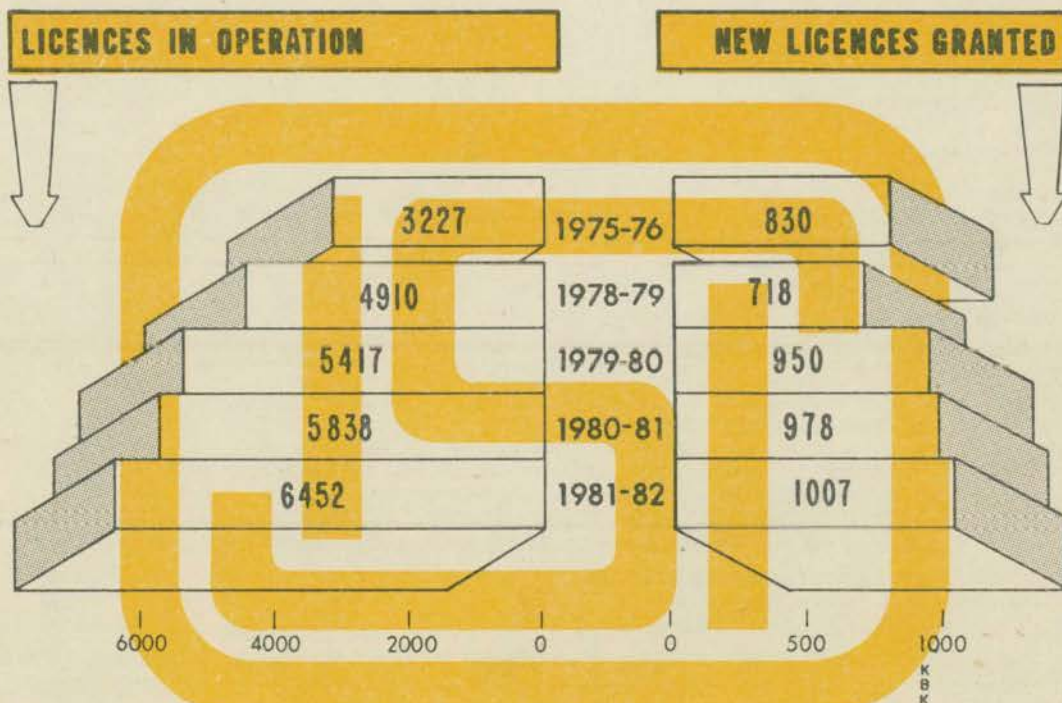


TABLE 1 INDUSTRYWISE DISTRIBUTION OF CERTIFICATION MARKS LICENCES (AS ON 31 MARCH 1982)

Sl No.	Industry	No. of Licences in Operation
i)	Agricultural and food products:	
	a) Food products and food colours	392
	b) Pesticides	1 080
ii)	Chemicals	419
iii)	Civil Engineering and plywood:	
	a) Construction materials and other engineering items	472
	b) Plywood panels, battens and metal fittings	190
iv)	Consumer products and medical instruments	175
v)	Diesel engines, pumps, LPG cylinders/valves and other mechanical engineering items	366
vi)	Electrotechnical including electronics and telecommunication (cables and conductors, flame-proof electrical equipment, electrical motors, etc)	965
vii)	Marine, cargo movement and packaging (containers, packaging materials, etc)	63
viii)	Petroleum, coal and related products	222
ix)	Structural and metals:	
	a) Metal products	263
	b) Steel	839
x)	Textile and allied products:	
	a) Jute	181
	b) Textile and textile machinery	232
xi)	Deferred licences	593
	TOTAL	6 452

- d) *Consumer Products and Hospital Appliances* — Hydraulic operation tables, major; hydraulic operation tables, minor; beltless sanitary napkins; and round shape and bowl shape cast iron *kadahies*.
- e) *Electrotechnical Including Electronics and Telecommunication* — Organic, baking, impregnating, insulating varnishes for electrical purposes; magnetic tapes for sound recording and reproduction; electric toaster; insulation resistance tester; intrinsically safe electrical apparatus and circuits; factory built assemblies of switchgear and controlgear; and link clips for electrical wiring.
- f) *Mechanical Engineering Products* — Two-stage, one-litre fuel filters for diesel engines.
- g) *Petroleum, Coal and Related Products* — Tooth powder, foaming; micro-cellular rubber soles and heels; and re-refined automotive internal combustion engine lubricating oil.
- h) *Steel and Metal Products* — Steel tubes for idlers for belt conveyors; graphite crucibles; silver-tin dental amalgam alloy; rectangular pressed steel tanks; and horizontally cast iron double flanged pipes for water, gas and sewage.
- j) *Textiles* — Flats and flats' screws, handloom cotton *lungies*, and viscose rayon cut staple (spun) yarn.

TABLE 2 REGIONWISE DISTRIBUTION OF CERTIFICATION MARKS LICENCES (AS ON 31 MARCH 1982)

Sl No.	Region	Branch Office (Areas Covered)	No. of Licences in Operation
i)	Eastern	a) Calcutta (West Bengal, Assam, Arunachal, Meghalaya, Nagaland and Andamans)	1 208
		b) Bhubaneshwar (Orissa)	69
		c) Patna (Bihar)	197
ii)	Western	a) Bombay (Maharashtra and Goa)	1 026
		b) Ahmadabad (Gujarat, Daman and Diu)	532
iii)	Northern	a) S. A. S. Nagar (Chandigarh) [Punjab, Himachal Pradesh, Jammu and Kashmir, Haryana (Districts other than those indicated in Delhi)]	521
		b) Bhopal (Madhya Pradesh)	191
		c) Delhi [Including states of Haryana (Districts Faridabad, Gurgaon, Rohtak, Sonapat, Mohindergarh and Bhiwani) and Uttar Pradesh (Districts Ghaziabad, Bullandshahr and Meerut)]	734
		d) Jaipur (Rajasthan)	179
		e) Kanpur [Uttar Pradesh (Districts other than those indicated in Delhi)]	295
iv)	Southern	a) Madras (Tamil Nadu and Pondicherry)	695
		b) Bangalore (Karnataka)	374
		c) Hyderabad (Andhra Pradesh)	287
		d) Trivandrum (Kerala)	144
	TOTAL		6 452

TABLE 3 INSPECTIONS CARRIED OUT DURING 1 APRIL 1981 TO 31 MARCH 1982

Sl No.	Region	Branch Office	Preliminary Inspections	Periodic Inspections	Other Inspections
i)	Eastern	a) Calcutta	308	4 450	1 424
		b) Bhubaneswar	12	157	24
		c) Patna	28	417	119
ii)	Western	a) Bombay	141	1 792	1 089
		b) Ahmadabad	123	975	384
iii)	Northern	a) S. A. S. Nagar (Chandigarh)	182	1 372	255
		b) Bhopal	59	438	127
		c) Delhi	353	2 750	688
		d) Jaipur	63	574	158
		e) Kanpur	66	744	27
iv)	Southern	a) Madras	129	2 127	72
		b) Bangalore	49	1 536	206
		c) Hyderabad	73	1 052	30
		d) Trivandrum	24	725	25
TOTAL			1 610	19 109	4 628

USERS' PREFERENCE FOR ISI-CERTIFIED PRODUCTS

Organization	Decision
a) Directorate General of Health Services, New Delhi	Instructions have been issued to all the hospitals to give preference to ISI-certified products in their purchase programmes.
b) Directorate of Industries, Hyderabad	Instructions have been issued to all general managers of the District Industries Centres to take immediate steps to see that the products manufactured by the industrial units are covered under the ISI Certification Marks Scheme to the extent possible.
c) Directorate of Agriculture, Himachal Pradesh	Instructions have been issued to all District Agricultural Officers and Project Officers that only ISI-certified bio-fertilizers may be purchased and distributed.
d) Irrigation Department, Government of Rajasthan	The Chief Engineer, Irrigation Department, Government of Rajasthan has issued instructions to all Executive Engineers that they should call for goods bearing ISI Mark. In case there are no licensees for a product, the tender enquiry for purchase should have a clause that goods should conform to the relevant Indian standard(s).
e) Public Works Department (R & B), Government of Jammu and Kashmir	Instructions have been issued that only those products which bear ISI Certification Mark shall be used on the works. In case certain materials are not available with ISI Certification Mark in the market, such materials conforming strictly to the relevant IS specifications may be used on the works.
f) Director of Agriculture, Bihar	The Governmental agencies have been advised to give preference to the ISI-Marked bio-fertilizers. Further, instructions have also been issued that only those commodities be recognized in the market as carry ISI Mark.
g) The Nizam Sugar Factory Ltd (Public Sector Company), Hyderabad	The Factory has decided to purchase only ISI-Marked bags for sugar filling.
h) Commissioner of Industries, Government of Andhra Pradesh	Manufacturers of gauze and bandage cloth have been directed to obtain ISI Mark.

FINANCIAL INCENTIVES FOR ISI LICENSEES

<i>Organization</i>	<i>Decision</i>
a) Government of Rajasthan	The State Government issued guidelines for grant of subsidy to the extent of Rs 1 000.00 per year to small scale industries for joining ISI Certification Marks Scheme. The subsidy is to cover expenses towards Application Fee, Annual Licence Fee, Renewal Fee and Marking Fee.
b) State Bank of Saurashtra, Hyderabad	The Bank has offered the following relaxations to small scale industrial units resorting to ISI Certification Marking: <ul style="list-style-type: none">a) Relaxation in margin up to 10 percent on testing/quality control equipment up to a maximum limit of Rs 100 000 subject to a certificate from ISI that the equipment is needed essentially for introducing/improving the quality control; andb) Relaxation in margin up to 10 percent on finished goods bearing ISI Mark.
c) Andhra Pradesh Small Scale Industries Development Corporation Ltd, Hyderabad	The Corporation has decided to grant interest free loan to an extent of Rs 5 000.00 to units who go in for ISI Certification.
d) State Bank of Mysore	The Bank has circulated to all its Officers, the Government instructions on <i>Household Electrical Appliances (Quality Control) Order 1976</i> which prohibits manufacture, sale, etc, of the household electrical appliances which are not of the specified standard. The Branches have been advised to ensure that manufacturers of household electrical appliances financed subscribe to the ISI Certification Marks Scheme. The existing units already financed should be advised to get in touch with ISI and have their products certified.
e) Government of Kerala, Trivandrum	The State Government increased the limit of subsidy to 50 percent of the total cost of equipment or Rs 25 000.00 whichever is less (against Rs 10 000.00 earlier) for establishment of testing laboratories attached to small scale units required for operation of ISI Certification Marks Scheme, 'Q' Marking, Ag-marking, drug licences, FPO licence or allied standards recognized by the State or the Central Government.
f) Development Commissioner, Small Scale Industries, Government of India	The Commissioner has advised all State Directors of Industries to issue necessary orders towards providing subsidy for those small scale industrial units which opt to get registered with ISI under the ISI Certification Marks Scheme.

COMPANY STANDARDIZATION

To promote standardization activity at the company level three training programmes in company standardization were organized at New Delhi, Agra and Jamshedpur. While the New Delhi and Agra programmes were devoted to automobile, tractor and ancillary industries, and diesel engine industry, respectively, the Jamshedpur programme was open to all the engineering industries. Participants comprised 77 engineers and executives drawn from 39 organizations.

INTERPLANT STANDARDIZATION IN STEEL INDUSTRY (IPSS)

An important highlight of this on-going project was the setting up of a full-fledged IPSS Secretariat in ISI on 1 April 1982. The necessary financial support for the secretariat will be provided by the Steel Authority of India Limited. The number of IPSS standards finalized for printing came to 21 which covered items like flexible couplings, pumps, oilseal units, motors, oils and crane equipment, and design parameters of ladles, EOT cranes and conveyor galleries used in steel plants.

The work of IPSS has been broadly divided into two groups, namely, 'Consumable Stores and General Equipment' and 'Design Parameters'. About 150 executives/engineers from all the steel plants, heavy engineering establishments and design organizations are actively participating in this activity.

TRAINING PROGRAMMES — STANDARDIZATION

INTERNATIONAL TRAINING PROGRAMME IN STANDARDIZATION

The Fourteenth International Training Programme in Standardization for Developing Countries was held during 12 November 1981–5 February 1982. Participants included 37 trainees from 18 countries, namely, Afghanistan, Ethiopia, Ghana, Indonesia, Iraq, Jamaica, Jordan, Kenya, Malawi, Mauritius, Nepal, Philippines, Saudi Arabia, Sri Lanka, Syria, Tanzania, Vietnam and Zambia. So far, under this programme which was instituted in 1964, training has been imparted to 185 technical personnel from 38 developing countries of Asia, Africa and Latin America.

TRAINING OF ASSISTANT DIRECTORS (TRAINEES) OF ISI

Officers joining the ISI cadre, as Assistant Directors, are imparted detailed training, for a period of one year covering 3 phases, namely, acclimatisation and study phase (3 months), in-field training (3 months) and in-office training (6 months). During the period under review, the training of the tenth batch of 28 officers was completed. Eight officers of eleventh batch who have completed the acclimatisation and study

phase have been posted to different places for in-field training. The training of the twelfth batch of officers consisting of 22 trainees too commenced on 29 March 1982.

TRAINING PROGRAMMES — QUALITY CONTROL

STATISTICAL QUALITY CONTROL

Three training programmes were conducted during the year which received participation from 53 personnel drawn from 48 organizations. The programmes were held at Patna, Batala and Jaipur and covered the themes of diesel engine industry, foundry industry, and cables and conductors industry, respectively.

REGIONAL WORKSHOP ON STANDARDS FOR STATISTICAL QUALITY CONTROL

The Workshop was conducted in August 1981 at Calcutta. As many as 43 participants from 34 organizations attended this workshop and discussed their problems relating to the standards on SQC. The Workshop was inaugurated by the Director General, Dr A. K. Gupta, and was conducted by Prof P. K. Bose, Chairman, Quality Control and Industrial Statistics Sectional Committee, EC 3.

INTERNATIONAL TRAINEES

The Institution also makes available training facilities in statistical techniques to individual technical personnel from developing countries. During the year under report, training was imparted to three technical officers – two from the Bureau of Ceylon Standards (BCS), Sri Lanka and one from the Central Organization for Standardization and Quality Control (COSQC), Iraq.

NINETEENTH INDIAN STANDARDS CONVENTION

The Nineteenth Indian Standards Convention met at Madras during 17–22 January 1982 under the leadership of Rao Birendra Singh, Union Minister of Agriculture, Rural Reconstruction and Civil Supplies, who delivered the Presidential Address. The Convention was inaugurated by Shri Sadiq Ali, Governor of Tamil Nadu and received participation from 575 delegates representing scientific and technical institutions, industrial organizations in public and private sectors, government departments and consumers including organized consumer bodies. Mr Henri Durand, President, International Organization for Standardization (ISO) and Mr B. Vaucelle, Director General, French National Standards Body (AFNOR), also attended the Convention as special invitees. The deliberations of the convention were channeled through five Technical Sessions dealing with the various important aspects of standardization and quality control, namely, quality control and standardization in handloom industry,

standardization for development of automotive industry, mandatory enforcement of standards for consumer protection, quality grading in Indian standards and role of international standards in the development of national industry.

CONFERENCE ON FIRE FIGHTING EQUIPMENT

An Industrywise Conference on Fire Fighting Equipment was organized with the cooperation of the Ministry of Home Affairs, Government of India at Nagpur on 4 November 1981. Representatives of about 100 organizations comprising users, manufacturers and technologists attended the Conference. The deliberations covered problems relating to implementation of Indian standards and the difficulties being experienced in covering some of the Indian standards under the ISI Certification Marks Scheme.

PUBLICATIONS AND COMMUNICATION

During the year under review, 765 new and revised Indian standards were printed and 601 Indian standards were reprinted to replenish the stocks. In addition, two major publications, namely, 'Handbook of Food Analysis: Part XI Dairy Products' and 'Explanatory Handbook on Masonry Code' too came off the press. The ISI Handbook, which provides a comprehensive guide for information on national standards and other publications of the Institution, won the prestigious 'National Award for Excellence in Printing and Designing' instituted by the Union Ministry of Information and Broadcasting. The Handbook was awarded a Certificate of Merit in the category of 'directories and encyclopaedias'.

To bring these publications to the notice of the concerned interests, the Institution issued a series of Sectional Lists of Indian standards, ISI Buyers' Guide and Supplement to ISI Handbook 1980. A series of informative pamphlets were also brought out to disseminate information about the activities and achievements of the Institution.

PERIODICALS

The Institution's four periodicals, namely, *ISI Bulletin*; *Standards: Monthly Additions*; *Standards Worldover: Monthly Additions*; and *Manakdoot*, were issued regularly. These periodicals are playing a notable role in promoting awareness about standardization and the important contribution being made by ISI towards furthering the cause of economic and industrial growth.

TRANSLATION SERVICE

During 1981-82 considerable assistance was provided to various experts in locating relevant data and information from standards and other technical documents in foreign languages. A

large number of documents comprising standards, technical reports, scientific and technical papers, etc, were translated from various foreign languages, such as French, German and Russian, into English.

TECHNICAL INFORMATION SERVICES

COMPUTER CELL

A major achievement of the year was the creation of data base on certification activity to facilitate quick retrieval of information on aspects like collection of revenue and renewal of licences. To cover other fields of information of certification activity, a system for controlling and monitoring the review and revision of marking fees was also evolved which would give the much needed Marking Fee Directory as a computer output.

The data base on classified information on Indian and overseas standards, created last year, was further developed by adding more efficient retrieval programmes.

As a step towards fulfilling India's obligations under the ISONET and GATT Standards Code, the design and development of a data base on standards and technical regulations, in collaboration with the National Informatics Centre, was also taken up.

The Computer Cell also undertook a number of other activities including statistical analysis of a large volume of data on yarn for determining the process capabilities of the yarn spinning units in the country for review and revision of the relevant Indian standards.

ISI LIBRARY

During the year, the ISI Library at the headquarters received and processed 25 089 standards and other technical publications and compiled 35 bibliographies.

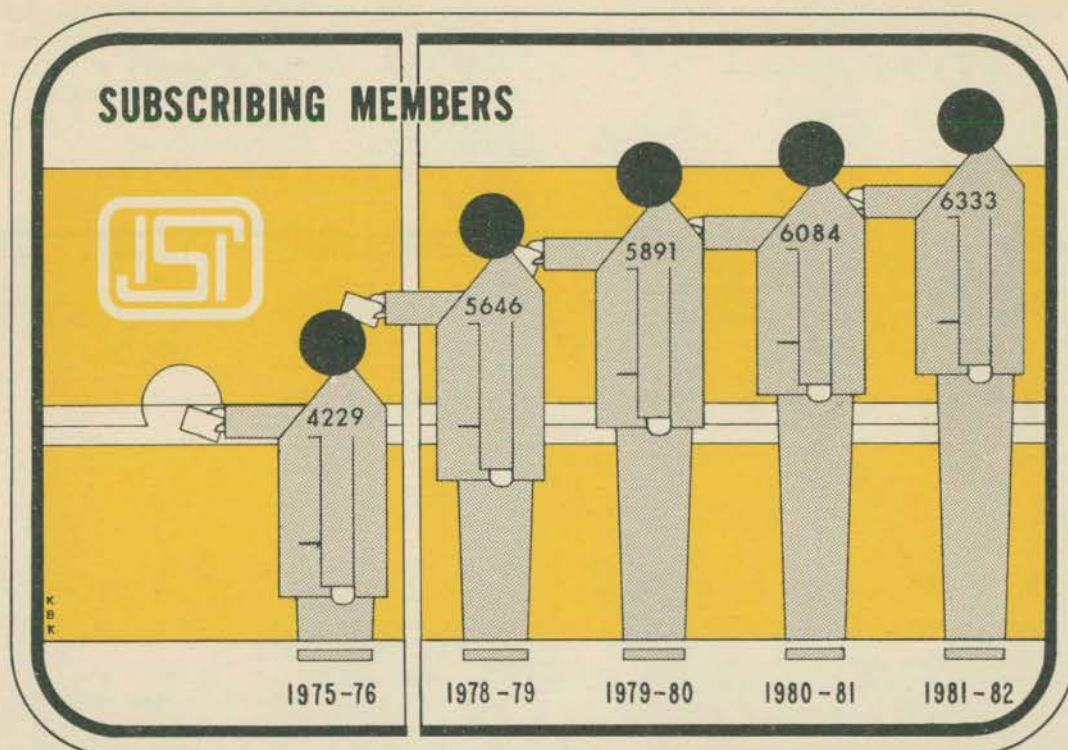
Standards Worldover: Monthly Additions, a monthly bulletin which lists the latest publications of different standards bodies received by the Institution, was brought out regularly. The bulletin is being well received by its users.

The Regional and Branch Offices of the Institution were supplied with standards and reference books to meet the information needs of members in the respective areas.

PUBLIC RELATIONS

SUBSCRIBING MEMBERSHIP

The number of subscribing members of the Institution increased from 6 084 as on 31 March 1981 to 6 333 as on 31 March 1982. The



membership fee collected from subscribing members during 1981-82 amounted to Rs 4.86 million as against Rs 4.56 million during the preceding year. The position regarding various categories of membership as on 31 March 1981 and 31 March 1982 is as given in Table 1.

TABLE 1 ISI SUBSCRIBING MEMBERSHIP

Class of Membership	Number of Members as on	
	31 March 1981	31 March 1982
Patrons	19	23
Donor members	74	76
Sustaining members	1 875	1 934
Associate members	2 258	2 390
Ordinary members	1 582	1 615
Individual members	276	295
TOTAL	6 084	6 333

SALE OF STANDARDS

The revenue realised from the sale of Indian and overseas standards during 1981-82 is as follows:

	Rs
Indian standards	3 923 146.00
Overseas standards	2 148 438.00
Commission earned on sale of overseas standards	856 623.00

PROGRESSIVE USE OF HINDI IN ISI WORK

A large number of documents relating to various areas of work including certification marks notifications; certification marks licences; circular letters; general orders; office orders; advertisements; and technical papers for the ISI Convention held at Madras were translated into Hindi. Besides, press communiques and press releases were also issued to newspapers and magazines on important activities of the Institution. The Hindi Unit also brought out four issues of the quarterly 'Manakdoot' which is playing a notable role in disseminating popular information about standardization through the medium of the national language.

HINDI EXTENSION WORK

Several employees were deputed for training in Hindi, Hindi typewriting and Hindi stenography under the Hindi Teaching Scheme of the Ministry of Home Affairs. The Official Languages Implementation Committee (OLIC) which looks after the work of progressive use of Hindi in ISI work held 3 meetings during the year. Official Languages Implementation Committees were also set up/activated in the four Regional Offices situated at Bombay, Calcutta, Madras and S.A.S. Nagar (Mohali) as also at Branch Offices at Ahmadabad, Bangalore, Jaipur, Kanpur and Patna.

The Third Hindi Workshop on Noting and Drafting was organized from 14 October 1981 to 5 January 1982, which was attended by 14 employees.

TRANSLATION OF INDIAN STANDARDS INTO HINDI

As a follow up action on the directives of the Third Parliamentary Official Languages Committee, an Advisory Committee for Translation of Indian Standards into Hindi was set up comprising representatives of the Ministry of Law, Ministry of Civil Supplies, Ministry of Industry, Development Commissioner for Small

Scale Industries, and ISI. The Committee held three meetings during the year and prepared a list of about 500 Indian standards for translation into Hindi giving priorities to items notified for compulsory ISI certification or compliance to Indian standards, farm machinery and implements, food products, consumer items and articles produced in Hindi speaking areas. A tentative plan for translation and publication of 100 Indian standards during the year was agreed upon.

Two Indian standards, namely, 'IS : 920-1972 Common salt cattle licks for animal consumption' and 'IS : 2052-1979 Compounded feeds for cattle' were translated into Hindi.

REGIONAL AND BRANCH OFFICES

The Institution's network of Regional Offices, Branch Offices and Inspection Offices spread all over the country continued to exert effectively to provide on-the-spot service in standards implementation and quality control to various sections of industry and technology. As a result, considerable progress was achieved in regard to activities like implementation of standards, certification marking, enrolment of new members, sale of publications and wider dissemination of information about standards and standardization.

EASTERN REGION

The Eastern Regional Office continued to pursue sustained promotional efforts to create increased awareness among manufacturers, users and other related interests about the importance and utility of standardization programmes. Various activities undertaken for the purpose included press advertisement and participation in conferences, seminars, industrywise meetings, exhibitions and fairs. Among these particular mention may be made of the following:

CERTIFICATION MARKS

The number of the Certification Marks licences issued came to 164. New products covered under the scheme included raw materials for cosmetic industries derived from petroleum; mineral oil for chemical industries; permanent rubber adhesive for footwear; rectification press for steel tanks; tubular steel poles for overhead power lines; steel pipe flanges; horizontally cast iron double flanged pipes for water, gas and sewage; etc.

Two review meetings were organized to assess the performance of the ISI licensees for the manufacture of plywood panels. The meetings which were held on 26 September 1981 and 22 March 1982 identified a number of problems and suggested corrective measures for more effective operation of the ISI Certification Marks Scheme.

A special meeting with the Industrial Adviser, Iron and Steel Control was held to streamline the procedure for allocation of tested billets to the priority sector. The meeting also underlined the

<i>Place and Date</i>	<i>Particulars</i>	<i>Sponsored by</i>
Durgapur 24 June 1981	Seminar on Production Assurance for Management of Quality and Reliability	Indian Association for Quality and Reliability
Santiniketan 6-7 July 1981	Conference on Development of Rural Economy	Visvabharati Institute of Public Health Engineers, Government of West Bengal
Calcutta 22 July 1981	Entrepreneurship Development Programme	Bengal National Chamber of Commerce
Calcutta 4-12 August 1981	Training on Packaging for Exports	Indian Institute of Packaging
Calcutta 6-7 August 1981	Quality Control Workshop on Electronic Industries	Department of Electronics
Calcutta 11 August 1981	Role of ISI for Determination of Classification of Products for the Purpose of Central Excise Levy	Training Institute of Port Trust
Calcutta 17-19 August 1981	Regional Workshop on Standardization for SQC	Indian Standards Institution
Calcutta 6 August 1981	Seminar on Quality Circles	Department of Electronics
Calcutta 21-22 November 1981	Seminar on Electrical Measurement, Calibration and Standardization	Institution of Engineers and ISI
Calcutta 11 January 1982	Seminar on Quality Management in Small Scale Industries	SISI and Department of Electronics
Calcutta 14 January 1982	Seminar on Air Pollution and Control	Institution of Engineers
Calcutta 30 March 1982	Seminar on Agricultural Implementation	SISI

need for the re-rollers to join the fold of the ISI Certification Marks Scheme.

A meeting with the Shellac Export Promotion Council to bring shellac under the ISI Certification Marks Scheme was of special significance. The meeting helped to finalize the Scheme which envisages Shellac Export Promotion Council acting as the Competent Authority for the operation of the Scheme on behalf of ISI.

A meeting was held with the representatives of the Industrial Fasteners Association of India on 5 November 1981 to explore the possibility of bringing them under the ISI Certification Marks Scheme.

LABORATORY SERVICES

The facilities available with the Regional Laboratory were extended to cover testing of 19 new items including products of popular interest like dye-based fountain pen ink, laundry soap, *maida*, welder's brush, deepwell hand pumps, carpenter's wooden-bodied nose planes and leather pump buckets.

BHUBANESHWAR

An outstanding event was the organization of the Second Conference on Implementation of Indian Standards in Orissa State at Bhubaneswar during 18-19 April 1981 which received participation from nearly 350 senior representatives from organized purchasing and inspection agencies, industrial houses in public and private sectors, authorities connected with industrial development programmes, etc. The Conference considered in detail the ways and means for promoting increasing involvement of the State Government in programmes of standardization and quality promotion.

As a part of its promotional activities, the Branch Office participated actively in the entrepreneur development programmes organized by the District Industries Centres, Small Industries Service Institute, Small Scale Industries Association, etc. The ISI Foundation Day was celebrated jointly with the Institution of Engineers, Orissa State Centre by organizing a lecture programme on standardization and quality control for electronic components.

PATNA

The Patna Branch Office maintained close liaison with the Department of Industries, Government of Bihar and various other agencies in the State. Training programmes relating to diesel engines (April 1981) and leather safety items (August 1981), and an industry clinic on cables and conductors (March 1982) were organized. The Directorate of Agriculture, Government of Bihar, in association with the two Agricultural Universities in the State issued an order making the ISI Certification Marking

compulsory for purchase of bio-fertilizers in the State by the public sector organizations. The number of new ISI Certification Marks licences issued during the year increased to 37 compared to 25 in the preceding year.

In addition, the Branch Office also maintained close liaison with the National Productivity Council, Small Industries Service Institute, Export Inspection Council, etc.

WESTERN REGION

Shri A. K. Majumdar, Secretary, Ministry of Civil Supplies, Government of India, inaugurated the new office-cum-laboratory building of the Western Regional Office in Bombay on 25 March 1982. Speaking on the occasion, Shri Majumdar appreciated that the greatly increased facilities becoming available to the Regional Office would give a new fillip to the standardization activity in the region including increased adoption of standards and quality certification programmes.

The ISI Certification Marks Scheme made a substantial progress during the year. New products covered under the Scheme comprised the following:

- a) Hydraulic operation tables, major and minor;
- b) Butachlor EC;
- c) Aluminium sulphate, non-ferric;
- d) Insulation resistance tester;
- e) Drinking chocolate;
- f) Injection moulded PVC socket fittings with solvent cement joint for water supply;
- g) Cast iron specials for use with asbestos cement pressure pipes;
- h) Non-ferrous metal sliding door bolts for use with padlocks;
- j) Universal gearless hand operated pulling and lifting machines;
- k) Water meters (bulk type);
- m) Glassy sodium metaphosphate;
- n) Silver-tin dental amalgam alloy;
- p) Trisodium phosphate;
- q) Link clips for electrical wiring; and
- r) Rubber conveyor and elevator belting.

AHMADABAD

The Ahmadabad Branch Office celebrated its tenth anniversary on 12 July 1981 by organizing a Seminar on Standardization and Industrial Development in collaboration with the Gujarat Chamber of Commerce and Industries and the Institution of Engineers (India), Gujarat Centre at Ahmadabad. About 300 delegates from various parts of the State attended the Seminar. An exposition of the ISI-certified products was also organized on the occasion.

for creep test for HDPE pipes, tachometer, pedestal grinder, etc.

The Regional Office took part in the following exhibitions and expositions of standards:

- a) Exhibitions organized on the occasion of:
 - 1) Seminar on Quality Control of Electrical Goods, Madras (9 May 1981).
 - 2) Summer School 'Modern Trends in Building Material Technology' under the Quality Improvement Programme, Ministry of Education (8-20 June 1981).
- b) Government Exhibition, Coimbatore (7 June-17 July 1981).
- c) Leather Fair, Madras (13 January-6 February 1982).

BANGALORE

The Bangalore Branch Office continued its efforts to expedite the construction of the building for laboratory-cum-office complex on 1.2 hectares of land made available by the Government of Karnataka in Peenya Industrial Estate. A Building Planning Committee was set up to decide the project requirements. The Committee has already finalized the plan drawings. The Karnataka Small Scale Industrial Development Corporation (KSSIDC) has invited tenders and construction work is likely to start shortly.

The ISI Certification Marks Scheme continued to make steady progress, under which 60 new licences were issued during the year. New products covered by the Scheme included the following:

All-India First

- a) Re-refined automotive internal combustion engine lubricating oils, and
- b) Intrinsically safe sound powered telephones.

Karnataka First

- a) Unplasticized PVC pipes for potable water supply;
- b) Varnished bonded glass fibre covered copper conductors;
- c) Infant milk foods;
- d) Cylinder liners;
- e) High density polyethylene pipes for potable water supply, sewage and industrial effluents;
- f) Cast iron fittings for asbestos cement pressure pipes;
- g) Portland pozzolana cement;
- h) Leaf springs for automobile suspension;
- j) Sodium, technical, 2, 4-D; and
- k) Monocrotophos water soluble concentrates.

The Branch Office carried out special inspections for (a) printed circuit boards and electronic relays, on behalf of the Underwriters Laboratories Inc., USA; (b) electric motors, on behalf of the Canadian Standards Association; and (c) cast iron fittings for asbestos cement pipes, on behalf of the Maharashtra Water Supply and Sewerage Board.

The Branch Office was represented on a number of panels which undertake inspections to determine export-worthiness of units mainly for engineering items like electric motors and generators, pressure cookers, automobile cables, ammeters for automobiles, machine tools, etc. Similarly it was also associated with the panel set up by the Export Inspection Council for assessing export-worthiness of fisheries units.

As a part of its promotional activities, the Branch Office took part in a number of conferences, seminars, etc, among which special mention may be made of the following:

- a) Industrywise Bio-fertilizers Conference organized by ISI (20 April 1981);
- b) Problems and Prospects of Food Fermentation and Beverage Industries organized by the Association of Food Scientists and Technologists (10 May 1981);
- c) Seminar on Quality Assurance and Reliability (21-22 August 1981);
- d) Workshop on Aid for Aurally Handicapped organized by the Indian Institute of Speech and Hearing (12 October 1981); and
- e) Seminar on *Household Electrical Appliances Quality Control Order 1981* organized jointly by ISI, SISI, SSIDC and Department of Industries and Commerce, Government of Karnataka (17 March 1982).

Important meetings attended during the period included those of the following committees:

- a) Committee on Hand Pumps of the Rural Development Department, Government of Karnataka;
- b) The Advisory Committee of the Small Industries Service Institute, Bangalore;
- c) Scientific Advisory Committee of the Indian Plywood Industries Research Institute; and
- d) Packaging Committee of the Indian Institute of Packaging.

The Branch Office also participated in as many as 12 exhibitions in which ISI-certified products were put on display. Important among these included Mysore Dassara Exhibition-1981 (29 September-28 November 1981); Consumers Exhibition organized by the Karnataka Consumers Service Society's National Convention (16-17 January 1982); and the Consumer Exhibition organized by the Consumer

Guidance Society of India, Dandeli
(6-7 February 1982).

HYDERABAD

The Hyderabad Branch Office took part in a number of important seminars and conferences including the following:

- a) Seminar on Safety in Products organized by the Consumer Guidance Society of India, Hyderabad (19 April 1981);
- b) Workshop on National Strategy for Food Quality Control jointly sponsored by the Food and Agricultural Organization (FAO), World Health Organization (WHO), Directorate General of Health Services (DGHS) and National Institute of Nutrition (NIN) (12-16 October 1981);
- c) Seminar on Packaging sponsored by SISI (11 March 1982); and
- d) Seminar on Non-destructive Inspection sponsored by the Indian Institute of Non-destructive Inspection Engineers, Hyderabad (27 February 1982).

The Directorate of Industries, Government of Andhra Pradesh has stipulated compulsory covering of aluminium utensils under the ISI Certification Marks Scheme.

The following products were covered under the ISI Certification Marks Scheme for the first time in Andhra Pradesh: (a) Cotton yarn, (b) Carbon paper, (c) Graphite crucibles, (d) Synthetic detergents, (e) Deep-well hand pumps, (f) Bright bars, and (g) Plywood for general purposes.

Special inspections on behalf of the Underwriters Laboratories Inc., USA were conducted on printed circuit boards.

Spot surveys of industrial estates were conducted with the help of the District Industries Centres in the State to help the units to identify product standards and procedure for Certification Marking.

The following establishments of the State Government have decided to go in for the ISI-certified materials:

- a) Nizam Sugar Factory Ltd, Hyderabad—The factory has agreed to purchase only ISI-Marked A-twill jute bags for filling sugar.
- b) Andhra Pradesh State Electricity Board, Hyderabad—The Board has decided to purchase steel re-rolled products with ISI Mark only.
- c) Directorate of Industries, Hyderabad has instructed the departmental officers to see that necessary instructions were issued to the aluminium utensil manufacturing units under their control to obtain the ISI Mark.

Further, all the General Managers of DICs have been directed to cover the entire range of industrial products under the ISI Certification Marks Scheme, wherever possible.

The Commissioner of Industries has directed all the manufacturers of bandage and gauze cloth to obtain ISI Certification Marks licence.

- d) Urban Development Authority, Visakhapatnam—The Authority has agreed to buy ISI-Marked materials.
- e) Deputy Controller of Stores, South Central Railways, Secunderabad has affirmed that they will be giving preference to ISI-certified goods in their purchases.
- f) The Andhra Pradesh Small Scale Industries Development Corporation has requested the joint ventures to go in for the ISI Certification Marks Scheme. The Corporation has also decided to grant interest-free loans to the extent of Rs 5 000 to small scale units to encourage them to go in for the ISI Mark.

TRIVANDRUM

During the period under review, the first licence on all-India basis for magnesium sulphate was granted.

The following products were brought under the ISI Certification Marks Scheme for the first time in the State of Kerala: (a) Scouring powder, (b) Timber panelled and glazed shutters, (c) Cement paint, (d) Toilet and laundry soaps, (e) Rubberized coir sheets for cushioning, (f) Rubber mats for electrical purposes, (g) Carbaryl WDP, (h) Domestic gas stoves for use with LPG, and (j) Biscuits.

For spreading the message of standardization and quality control, the Branch Office participated in the following:

- a) QR Week celebrations organized by the Indian Association for Quality and Reliability (IAQR), Trivandrum Branch;
- b) Seminar on Quality and Reliability organized by IAQR, Trivandrum Branch;
- c) Seminar on Industrial Prospects of Rubber and Plastics organized by the Kerala Small Scale Industries Association;
- d) Seminar on Industrial Possibilities in Calicut District organized jointly by Shree Narayana Educational Society and the District Industries Centre, Calicut; and
- e) Industry Clinic on Grey Iron Castings organized by the Small Industries Service Institute, Trichur at Calicut.

Besides, a pavilion was put up in the Trichur Pooram Exhibition during April/May 1981.

INTERNATIONAL COLLABORATION

The Institution continued to participate actively in the work of the International Organization for Standardization (ISO) and the International Electrotechnical Commission (IEC) in their task of developing International standards. The Institution also maintained its efforts to strengthen bilateral relations with other overseas countries.

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION (ISO)

VISIT OF THE PRESIDENT, ISO

Mr Henri Durand, President, ISO accompanied by Mr B. Vaucelle, Director General, AFNOR visited India during 14-24 January 1982 in response to an invitation extended by ISI on the occasion of the 19th Indian Standards Convention held in Madras. During their stay Mr Durand held discussions with the Director General, ISI on various matters of mutual interest, especially ISO activities. Discussion meetings were arranged with standards engineers from various organizations at Bangalore on 20 January 1982 and at New Delhi on 22 January 1982.

ISO COMMITTEE ON CERTIFICATION (CERTICO)

The ISO Committee on Certification held its 16th meeting during 15-16 June 1981 at Geneva. Two important issues discussed relate to the development of national and regional certification systems and mutual acceptability of the results of test houses and inspecting bodies in different countries. CERTICO, in this meeting, formulated guidelines on the following subjects: (a) Manufacturer's declaration of conformity to standards, (b) Methods of indicating conformity to standards, (c) Accreditation of testing laboratories, (d) Harmonized national certification systems, and (e) Mutual recognition of national certification systems.

REGIONAL LIAISON OFFICERS (RLOs)

The fourth annual meeting of the Regional Liaison Officers was held on 17 June 1981 at Geneva under the Chairmanship of Dr A. K. Gupta, Director General, ISI. The meeting reviewed the developmental activities in the countries of the region of concern to ISO and efforts being made to revive regional standardization activity in the ESCAP region.

DEVELOPMENT COMMITTEE (DEVCO)

The 16th meeting of DEVCO was held during 18-19 June 1981 at Geneva under the Chairmanship of the Director General, ISI. Important matters discussed in the meeting related to:

- a) Review of execution of the various elements of DEVCO Work Programme for 1981-82,
- b) Formulation of guidelines for execution of the elements of DEVCO Work Programme,

- c) Establishment of an *ad hoc* Working Group for development of DEVCO long-term programme (1983-85), and
- d) Extension of privilege of DEVCO membership (observer category) to the Correspondent Members of ISO.

PLANNING COMMITTEE (PLACO)

The meeting of PLACO was held during 14-15 September 1981 at Geneva. Director General, ISI is one of the members of this Committee appointed by the ISO Council. Some of the decisions at the meeting of interest to India are:

- a) Allocation of the Secretariat of ISO/TC 120 Leather and ISO/TC 120/SC 2 Tanned Leather to ISI;
- b) Acceptance of the Indian proposal for creation of a new committee on Jute and Jute Products for member-body enquiry; and
- c) Establishment of Technical Advisory Groups (TAGs) for Metrology, Fire Tests, and Medical Equipment.

A number of amendments to the ISO Directives for Technical Work were proposed for Council approval.

ISO COUNCIL

The 35th meeting of the ISO Council was held on 16-18 September 1981 at Geneva. The terms of reference of PLACO were revised so that it would function in future as Technical Board of the Council to guide and monitor technical work of the Organization. DEVCO resolution for permitting ISO Correspondent Members to become observer members of DEVCO was approved. The proposal for ISO Central Secretariat acting as the Secretariat of International Federation for the Application of Standards (IFAN) on a temporary basis was accepted.

LIQUID FLOW IN OPEN CHANNELS (ISO/TC 113)

The eleventh plenary meeting of ISO/TC 113 Measurement of Liquid Flow in Open Channels along with its seven subcommittees and a working group was held in New Delhi during 25 January-5 February 1982. India holds the Secretariat of ISO/TC 113 and all its seven subcommittees.

In all 57 delegates from nine countries participated in these meetings, including 22 from India. Shri K. K. Framji from India presided over the meeting of ISO/TC 113 as also that of its Subcommittee for Sediment Transport (SC 6).

The Committee approved three draft International standards for printing. Three ISO draft proposals and one draft technical report were approved for circulation.

INTERNATIONAL ELECTROTECHNICAL COMMISSION (IEC)

The 46th Annual General Meetings of IEC were held in Montreux (Switzerland) during 15-26 June 1981 and were attended by over 1 000 delegates representing 40 member National Committees. India was represented at the meetings by a three-member delegation. Apart from the meetings of the IEC Council and Committee of Action, the programme included meetings of 34 technical committees and subcommittees. Over 100 documents were accepted for circulation under the Six Months' Rule.

The Council approved the recommendations of the Committee of Action to set up a new Technical Committee on 'Solar Photovoltaic Energy Systems' to keep pace with the technological developments. This new work will apply not only to systems for conversion of solar energy into electrical energy but also to associated elements including the light input to the solar cell and all the necessary components to interface with the electrical distribution system.

The revised agreement between the International Electrotechnical Commission (IEC) and the International Commission for Conformity Certification of Electrical Equipment (CEE) was accepted by the Council. The agreement envisages that CEE wherever possible would endorse IEC standards instead of developing standards of its own and to base its certification activities on such endorsed IEC standards.

Based on the report of the examination visits, 11 countries have been cleared to become full members of IEC Quality Assessment System for Electronic Components. India is currently a participating member of the system.

The Committee of Action approved that work should be undertaken for the preparation of International standards for systems consisting of electronic devices and intended for use in connection with weighing and measuring of liquid flow. It was also decided that liaison with International Organization of Legal Metrology (OMIL) should be maintained in this work.

It was decided that an Information Technology Coordinating Group (ITCG) be created to organize the coordination of IEC work with the work of other international bodies that operate in the field of information technology.

MEETING OF THE WORKING GROUP OF NON-ALIGNED COUNTRIES FOR COOPERATION IN STANDARDIZATION, METROLOGY AND QUALITY CONTROL

Delegations of Cuba, Yugoslavia and India, the three coordinating countries for development of an Action Programme for Cooperation Among Non-aligned Countries in the Field of

Standardization, Measurement and Quality Control, met from 23 to 25 September 1981 at Havana. This was followed by a meeting of the Working Group of interested countries from 27 to 30 September 1981. The Working Group prepared the draft of the Action Programme for Cooperation Among Non-aligned Countries which included the following elements:

- a) Conduct of research on the problems of standardization, metrology and quality control in the non-aligned and other developing countries.
- b) Formulation of a common strategy for effective participation in the work of the international organizations for standardization, metrology and quality control.
- c) Exchange of scientific/technical information and experience relating to standardization, metrology and quality control.
- d) Organization of technical assistance in standardization, metrology and quality control.
- e) Training and upgrading of specialists in standardization, metrology and quality control.
- f) Creation or improvement of national systems of and material base for standardization, metrology and quality control.
- g) Organization and development of systems for certifying product quality and mutual recognition of test results.
- h) Harmonization of national standards, metrological norms and technical regulations.
- j) Formulation of a common strategy in standardization, metrology and quality control for the prevention and removal of technical barriers to trade between nations.
- k) Establishment of educational and information programmes dealing with standardization, metrology and quality control at the grassroot level.

INDO-SOVIET COOPERATION

Considerable progress took place under various themes of the Indo-Soviet Programmes for Scientific and Technical Cooperation in the Field of Standardization and Metrology. Under the Theme 6.3 'Personnel Training in the Field of Quality Control' Shri Y. K. Bhat, Director, Statistics, ISI held discussions with Soviet experts from 16 to 20 September 1981 in Moscow. The discussions led to exchange of information concerning systems of follow-up training in the field of quality control in India and USSR.

A two-member Indian delegation consisting of Shri S. C. Mohanty, Metallurgist, Tata Iron & Steel Company, Jamshedpur and Shri M. N. Neelakandhan, Assistant Director, ISI held discussions in Moscow, under Theme 4.6 'Steel Reinforcement and Prestressed Concrete Work' from 30 March to 5 April 1982. As a result of these discussions, proposals for harmonizing the Russian and Indian standards for hot-rolled deformed bars were finalized and comments exchanged on Russian and Indian standards on wires and strands for concrete reinforcement.

COOPERATION WITH OTHER COUNTRIES

EXCHANGE OF EXPERIENCE WITH PERSONNEL OF OTHER COUNTRIES

The Directors of National Standards Bodies of Nepal and United Arab Emirates visited ISI to have a first-hand view of its activities and operations. Personnel from the National Standards Bodies of Ivory Coast, Gambia, Tanzania, Zambia and Japan also visited ISI and held discussions on specific aspects of the Institution's work.

SPECIAL TRAINING PROGRAMMES

Special programmes of training were organized in the Institution for nominees sponsored by UNIDO from Thailand and Iraq in the field of in-plant standardization. Under Colombo Plan, trainees from Sri Lanka were provided detailed instructions on certification and quality control activities through discussions and field visits. Two officers from Burma were given training in the field of industrial metrology.

TECHNICAL COOPERATION WITH KENYA

As a follow-up action to inter-governmental agreement between India and Kenya for technical cooperation in various fields, Shri Y. S. Venkateswaran, Additional Director General (since retired) visited Kenya during 16-24 July 1981 as member of a delegation for identifying the specific technical assistance required in the field of standardization, quality control and certification.

ASSIGNMENTS ABROAD

During the year, the following officers were deputed on overseas service for rendering assistance to the concerned countries in matters relating to standardization and quality control:

Name	Assignment
Dr B. N. Singh DDG	UNIDO Expert in Statistical Quality Control (Brazil)
Shri V. S. Mathur Deputy Director	Food Technologist, Quality Control (Libya)
Shri R. K. Singh Deputy Director	Vegetable Oil and Fat Technologist (Libya)

PARTICIPATION IN MEETINGS ABROAD

A break-up of the Indian delegations which took part in important international meetings held abroad is given in Table 1. Of the 47 delegates who represented India at these forums, 24 were from ISI on whom the Institution incurred an expenditure of Rs 317 272.00.

TABLE 1 INDIAN DELEGATIONS SENT ABROAD

Sl No.	Meetings Attended	Country	No. of Delegates	
			Official (4)	Non-official (5)
(1)	(2)	(3)		
i)	ISO/TC 72/SC 3 Machinery for Fabric Manufacture and SC 4 Dyeing, Finishing & Allied Machinery & Accessories	France	—	1
ii) a)	ISO Committee on Certification (CERTICO)	Switzerland	1 (from ISI)	—
b)	ISO Development Committee (DEVCO)	Switzerland	2 (from ISI)	1
c)	ISO Regional Liaison Officers	Switzerland	1 (from ISI)	—
iii)	46th IEC Annual General Meetings	Switzerland	1 (from ISI)	2
iv)	ISO/TC 38/SC 1 Tests for Coloured Textiles and Colourants, and SC 2 Laundering, Drycleaning and Finishing Tests	Denmark	1 (from ISI)	—
v) a)	2nd Inter-secretary Meeting of ISO/TC 34 Agriculture and Food Products	Hungary	1 (from ISI)	—
b)	ISO/TC 34/SC 7 Spices and Condiments	France	2 (1 from ISI)	—

(Continued)

(1)	(2)	(3)	(4)	(5)
vi) a)	8th Meeting of Indo-Soviet Working Group under Theme 6.3 Personnel Training in the Field of Quality Control	USSR	1 (from ISI)	—
b)	ISO/TC 69 Application of Statistical Methods (Six Subcommittees)	} W. Germany	1 (from ISI)	—
c)	ISO/TC 176 Quality Assurance			
vii) a)	ISO/TC 149/SC 1 Cycles and Major Sub-assemblies	} France	—	1
b)	ISO/TC 149/SC 2 Sub-assemblies and Components			
viii) a)	ISO/TC 17/SC 8 Dimensions and Tolerances of Structural Steel Sections and Bars and its three Working Groups WG 2, WG 3 and WG 4	Sweden	2 (1 from ISI)	—
b)	ISO/TC 17/SC 2 Terminology, Classification and Designation of Steel	Sweden	1 (from ISI)	2
ix)	ISO Regional Training Seminar	Sri Lanka	2 (from ISI)	—
x)	Technical Assistance to Kenya in Standardization and Quality Control	Kenya	1 (from ISI)	—
xi)	Familiarization with Computerized Information Retrieval Systems at AFNOR	France	1 (from ISI)	—
xii)	Group Training Course in Import and Export Food Inspection	Japan	1 (from ISI)	—
xiii) a)	PLACO	Switzerland	1 (from ISI)	—
b)	ISO Council	Switzerland	1 (from ISI)	1
c)	Visit to BSI	UK	1 (from ISI)	—
xiv)	Meeting of Non-aligned and other Developing Countries for Cooperation in Standardization, Metrology and Quality Control	Cuba	2 (1 from ISI)	—
xv)	ISO/TC 105 Wire Ropes	Canada	—	1
xvi)	ISO/TC 45 Rubber and Rubber Products	USA	2 (1 from ISI)	1
xvii)	ISO/TC 146 Air Quality	USA	1	—
xviii)	IEC/TC 31 Electrical Apparatus for Explosive Atmosphere	USA	1	—
xix)	ISO/TC 11/SC 5 Shell Boilers	UK	1	—
xx)	Seminar on Harmonization of Standards and Standard Test Methods for Pulp and Paper Industry in South-East Asian Region	Philippines	1 (from ISI)	—
xxi) a)	ISO/TC 34/SC 8 Tea	Kenya	1	1
b)	ISO/TC 34/SC 15 Coffee	Kenya	1	—
xxii)	ISO/TC 150 Implants for Surgery	USA	1	—
xxiii)	Indo-Soviet Cooperation in the Field of Standardization and Metrology under Theme 4.6 Steel Reinforcement and Prestressed Concrete Work	USSR	1 (from ISI)	1
xxiv) a)	Interim Inspectorate Coordination Committee (ICC)	} Geneva	—	1
b)	Certification Management Committee (CMC)			

PLAN PROJECTS

SIXTH FIVE-YEAR PLAN (1980-81 to 1984-85)

The Sixth Five-Year Plan of the Indian Standards Institution was adopted by the Executive Committee on 30 December 1981. The Plan provides for suitable extension/strengthening of the various activities of the Institution to keep pace with the growing demand on its services. The salient provisions include the setting up of a Regional Office at Bhopal and new Branch Offices in the States of Assam, Himachal Pradesh, and Jammu and Kashmir.

In the realm of development of standards, the capacity will be augmented suitably from processing of 800 new and revised standards as in 1980-81 to 975 as in 1984-85. The total number of standards in force are expected to go up from about 10 800 to 13 169 at the end of the Sixth Plan

During the Sixth Plan period, the Institution will also be adding another dimension to its activities by undertaking preparation of a large number of comprehensive handbooks to make available properly collated information about requirements of standardization in specific subject fields. A sum of Rs 2.5 million is being provided for the purpose as part of Plan expenditure. This is in addition to the projects of developing explanatory handbooks entrusted to the Institution by the National Committee on Science and Technology.

In the field of certification marking, the number of new licences granted annually is expected to increase from 978 in 1980-81 to 1 225 in 1984-85. The number of operative licences is expected to go up from about 6 000 to 8 000 at the end of the Plan period.

The recurring expenditure of the Institution is expected to increase from Rs 40.97 million in 1980-81 to Rs 67.8 million in 1984-85. Of this, the income from the Institution's own resources, namely, membership fee, sale proceeds of publications, certification marking fees, etc, is expected to increase from Rs 32.6 million to Rs 57.0 million. The total recurring expenditure in the Sixth Plan is estimated to be of the order of Rs 269.4 million of which Rs 220.1 million will be met by the Institution from its own resources.

CAPITAL PROJECTS

The capital projects of the Institution for strengthening its infrastructural facilities are financed by the Government as part of the National Plan outlay. A limited portion of the expenditure on specific projects is also raised through contributions from industry.

The total outlay on capital projects during the Sixth Plan period is estimated at Rs 73.85 million

which includes a provision of Rs 53.85 million for on-going projects and Rs 20 million for new projects. Of the total outlay, Rs 70.95 million is to be provided by the Government and the remaining raised through contributions from industry and sale proceeds of handbooks brought out as part of the Plan projects.

Capital projects on which the work was underway during the year under report included Central Laboratory at Sahibabad and office-cum-laboratory complexes at Bombay and Calcutta. Details of the progress are as follows.

CENTRAL LABORATORY BUILDING AT SAHIBABAD

The work on the construction of the first phase of the Central Laboratory building comprising chemical block, mechanical block and workshop had been completed in the preceding year. In the year under review, work was taken in hand for construction of the second phase of the project comprising electrical block, service block, and quarters for essential staff. Three sheds to house systems for testing of diesel engines, pumps, flushing cisterns, water meters and domestic electrical appliances were completed. The various laboratory units were furnished appropriately and the testing facilities augmented to undertake testing of a variety of new products.

OFFICE-CUM-LABORATORY COMPLEX, BOMBAY

The project for construction of three-storey building undertaken in January 1980 has been completed successfully. The building was formally inaugurated in March 1982. The laboratory has been suitably equipped to provide the needed facilities for testing a large number of chemical, mechanical and electrical products.

OFFICE-CUM-LABORATORY COMPLEX, CALCUTTA

The six-storey building of the Eastern Regional Office had been completed and inaugurated in the preceding year. During the year under review, the laboratory facilities were augmented considerably by installing a number of new equipment and apparatuses.

SCIENCE AND TECHNOLOGY PROJECTS

The National Committee on Science and Technology (NCST) has entrusted the following two projects to the Institution:

- a) Development Programme on Code Implementation for Building and Civil

Engineering Construction (Project B-7), and

- b) Typification for Industrial Structures (Project B-8).

CODE IMPLEMENTATION PROGRAMME

The first project envisages preparation of a number of handbooks relating to National Building Code and other relevant codes, and extension work to promote the use of the National Building Code through implementation conferences, training programmes, etc. Another important area of work in this project is modification of building bye-laws of various corporations and municipalities in the country to bring them in line with the National Building Code.

About thirty-five subjects have been identified for preparation of handbooks. During the period under review, SP:20 (S&T)-1981 'Explanatory handbook on masonry code' was published.

The following handbooks were processed for printing:

- a) Explanatory handbook on Indian Standard Code for plain and reinforced concrete (IS : 456-1978),
- b) Explanatory handbook on codes for earthquake engineering (IS : 1893-1975 and IS : 4326-1976), and
- c) Handbook on concrete mixes.

The following handbooks were finalized:

- a) Causes and prevention of cracks in buildings, and
- b) Functional requirements of industrial buildings: Lighting and ventilation.

The handbooks under processing included the following:

- a) Timber engineering,
- b) Foundation of buildings,
- c) Concrete reinforcement detailing,
- d) Functional requirements of buildings,
- e) Fire protection,
- f) Plumbing services, and
- g) Tall buildings.

TYPIIFICATION FOR INDUSTRIAL STRUCTURES

The aim of this project is to establish optimum standard structural designs for industrial structures which would aid prefabrication and result in saving of scarce materials, such as cement and steel.

The Indian Institute of Technology, Madras, which is collaborating actively in the Project, has made considerable progress in regard to analysis, design and calculations for various combinations to arrive at typified designs for industrial structures. The first draft on 'Steel gable trusses' was prepared.

PERSONNEL MANAGEMENT

As on 31 March 1982, a total of 1 851 personnel were employed in the Institution as against 1 764 in the previous year, thus registering a net increase of 87 personnel.

The deployment of staff in the principal activities of the Institution during the last three years was as under:

Activity	Strength as on 31 March		
	1982	1981	1980
a) <i>Standards</i> Preparation, publication, sale and distribution of standards	505	499	493
b) <i>Quality Assurance and Certification Services</i> Operation and management of Certification Marks Scheme including laboratory testing	732	686	637
c) <i>Technical Promotion</i> Technical information service, implementation, statistical quality control, library, ISI Bulletin and miscellaneous publications, publicity, membership and computer cell	128	107	95
d) <i>Personnel Management and Supporting Services</i> Personnel management, accounts, general services, building maintenance and security	486	472	465
TOTAL	1 851	1 764	1 690

The ratio of technical to non-technical staff worked out to 1 : 1.8 as against 1 : 2.0 last year. Similarly, the officer-staff ratio was further brought down from 1 : 3.3 in 1980-81 to 1 : 2.8 during the year under report.

In order to meet the increasing demands on the Institution, two batches of Assistant Directors (Trainees) were recruited during the year, of which one batch comprising 9 officers was exclusively from SC/ST communities.

As a result of continuous efforts made by the Institution, the representation of SC/ST communities in various categories of posts increased from 205 in 1980-81 to 240 during the year under report. The position of representation

of SC/ST in various grades during the last three years is given below:

Grade	Number of SC/ST as on 31 March		
	1982	1981	1980
I	23	9	8
II	26	19	9
III	86	73	46
IV (Excluding sweepers)	74	74	53
IV (Sweepers)	31	30	34
TOTAL	240	205	150

Selection Grades were introduced in various categories of posts in Grades II, III and IV, which worked to the benefit of 71 employees belonging to these categories.

As part of the programme to impart specialized training to senior officers of the Institution, an Executive Development Programme was organized at ISI Headquarters in November 1981. Besides, the following officers/staff were deputed for training in different fields as indicated below:

Name & Designation	Training Programme
<i>Training Abroad</i>	
i) Shri D. S. Ahluwalia, DD	Training in the field of computerized information retrieval systems at French National Standards Body (AFNOR), Paris
ii) Shri K. P. Maitra, DD	Group Training Course in Import and Export Food Inspection in Japan under Colombo Plan
<i>Training in India</i>	
i) Shri S. M. Chakaraborty, Director	Programme on Managerial Aids to Decision Making
ii) Smt Mohanjit Kaur, LDC	Key Punch Operator Training Course
iii) Shri D. K. Sharma, TA (Lab)	Training Programme in Metrology and Inspection

<i>Name & Designation</i>	<i>Training Programme</i>
iv) Km H. N. Mythili, Director	} Workshop on Labour Laws and Domestic Enquiries
v) Dr A. K. Bhattacharya, Director	
vi) Shri B. C. Kapur, Director	
vii) Shri N. Srinivasan, Director	
viii) Shri J. K. Bhavnani, DD	Training Programme on Public Relations
ix) Shri A. Wilson Arul Kumar, TA (Lab)	Training Programme on Engineering Metrology and Inspection
x) Shri R. K. Arora, ADT	Training Course on COBOL and Introduction to Use of CDC Cyber System

EMPLOYER-EMPLOYEE RELATIONS

Employer-employee relations continued to be cordial during the year under report.

STAFF WELFARE

Welfare of the employees remains one of the important concerns of the Institution. To this end, several welfare measures adopted by the Institution were continued, namely, Holiday Homes, Employees' Consumer Cooperative Store, House Building Loan Scheme and Group Insurance for employees working in the laboratories and some other categories of employees exposed to hazardous environments/working conditions including those carrying cash. Besides, through the Welfare Fund and the Benevolent Fund, the Institution provided financial assistance to its needy employees and to dependents of employees on their permanent incapacitation/death. During the year, families of four employees were given assistance to the tune of Rs. 40 000.00 from the Benevolent Fund. Family Welfare Programmes introduced by the Government have been implemented in the Institution and employees given cash and other incentives.

EXPENDITURE — Contd

PREVIOUS YEAR Rs	SL NO.	HEADS OF EXPENDITURE	AMOUNT Rs
33 791 742		Brought Forward	38 880 535
	14.	Publicity	
26 689	14.1	Exhibitions	40 100
59 274	14.2	Advertising	268 170
63 468	14.3	Miscellaneous	107 048
126 140	15.	Conferences	211 029
73 447	16.	Training Programmes	107 401
42 143	17.	Electronic Data Processing	85 485
	18.	Library	
	18.1	Books	
		a) Expenditure during the year	174 871
		b) Less: Cost of books capitalized	174 871
109 990	18.2	Other Expenses	156 814
	19.	Office Expenses	
1 029 149	19.1	Stationery	784 604
391 366	19.2	Postage	422 924
671 109	19.3	Telephones and Telex	757 927
108 272	19.4	Recruitment	181 670
86 332	19.5	Refreshment and Entertainment	99 005
109 057	19.6	Liveries	96 607
209 706	19.7	Conveyance and Cartage	377 089
88 959	19.8	Insurance and Bank Charges	107 272
362 558	19.9	Miscellaneous	247 176
	20.	Furniture and Equipment	
	20.1	Furniture	
		a) Expenditure	181 384
		b) Less: Cost of assets capitalized	181 384
	20.2	Equipment	
		a) Expenditure	308 929
		b) Less: Cost of assets capitalized	308 929
213 686	20.3	Repair and Maintenance	184 283
	21.	Buildings	
727 507	21.1	Rent and Taxes	807 852
618 770	21.2	Electricity and Water Charges	771 295
283 042	21.3	Maintenance	363 611
	22.	Local Transport	
	22.1	Vehicles	—
199 371	22.2	Maintenance	264 801
40 647	23.	Audit Fee and Legal Charges	56 619
4 914	24.	Staff Training	67 416
230 250	25.	Interest on House Building Loan	280 480
250 000	26.	Investment Allowance Fund	336 000
558	27.	Loss on Assets Written off/Disposed of	—
	28.	Depreciation	
	28.1	Buildings	
		a) HQ	
		i) MB	25 539
		ii) MK	69 525
		b) Madras	32 202
	28.2	Laboratory Equipment	1 063 063
	28.3	Furniture and Equipment	397 197
	28.4	Vehicles	77 696
	28.5	Xerox Copying Equipment	16 947
1 054 203	29.	Deficit for 1980-81	1 682 169
			68 444
<u>40 972 349</u>		Total	<u>47 813 826</u>

RECEIPT AND PAYMENT ACCOUNT FOR THE YEAR ENDED 31 MARCH 1982

RECEIPTS

PREVIOUS YEAR Rs	SL NO.	HEADS OF RECEIPTS	AMOUNT Rs
	1.	Opening Balance	
	1.1	Cash and Bank Balances	5 898 407
7 300 750	1.2	Deposits	325 000
	2.	Membership Subscription	
	2.1	For 1981	1 881 555
4 852 787	2.2	For 1982	3 082 553
	3.	Recovery of Bills	
	3.1	For Sale of Publications	6 138 230
6 737 080	3.2	For Bulletin Advertisements	137 725
22 811 361	4.	Certification	26 593 292
27 518	5.	CGHS Contribution	28 290
—	6.	Conference (Delegates Fees)	29 360
95 595	7.	Training Fees	120 032
371 616	8.	Miscellaneous Receipts	317 645
24 317	9.	Interest from House Building Loan	—
	10.	Government Grant	
	10.1	For Recurring Expenditure	10 000 000
17 138 000	10.2	For Non-recurring Expenditure	8 400 000
	11.	Loans from Government	
	11.1	For House Building Advance	1 400 000
	11.2	For Flats for Bombay Employees	—
972 000	11.3	For Conveyance Advance	100 000
	12.	Donations	
	12.1	For Bombay Office Building	55 956
222 652	12.2	For Calcutta Office Building	130 501
6 164 866	13.	Contra Items	5 710 573
	14.	Loans and Advances	
	14.1	Conveyance	108 885
	14.2	House Building	289 181
	14.3	Festivals	171 700
	14.4	Flood	19 507
	14.5	Adjustable	2 952 968
	14.6	TA	55 716
	14.7	Earnest Money	60 366
3 190 386	14.8	Security Deposits	1 790
534 373	15.	Sundry Receipts	696 184
<u>70 443 301</u>		Total	<u>74 705 416</u>

PAYMENTS

PREVIOUS YEAR Rs	SL NO.	HEADS OF PAYMENTS	AMOUNT Rs
	1.	Pay	
5 914 984	1.1	Officers	6 021 119
6 855 091	1.2	Staff	7 324 497
12 770 075		Carried Over	13 345 616

PAYMENTS — Contd

PREVIOUS YEAR Rs	SL NO.	HEADS OF PAYMENTS	AMOUNT Rs
12 770 075		Brought Forward	13 345 616
	2.	Allowances	
4 084 324	2.1	Officers	4 967 589
6 648 506	2.2	Staff	8 289 720
606 352	3.	CGHS and Other Medical Charges	599 164
384 088	4.	Provident Fund Contribution	318 839
1 210 790	5.	Pension Fund	1 345 417
30 000	6.	Gratuity Fund	30 000
143 333	7.	Staff Welfare	140 346
	8.	TA	
293 608	8.1	Overseas	317 272
1 427 968	8.2	Officers and Staff	1 504 197
46 279	8.3	Committee Members	50 856
242 180	8.4	Leave Travel Concession	542 141
	9.	Subscription to International Organizations	
—	9.1	ISO	—
—	9.2	IEC	29 670
	10.	Production	
1 167 867	10.1	Standards	1 334 986
635 912	10.2	Bulletin	700 022
166 885	10.3	Calculation Aids and Binders	94 263
242 740	10.4	Other Publications	324 812
55 844	11.	Research and Consultation	5 000
1 012 408	12.	Testing Fees	1 573 007
1 045 414	13.	Laboratory Apparatus and Stores	913 461
	14.	Publicity	
26 689	14.1	Exhibitions	40 100
59 274	14.2	Advertising	224 734
63 468	14.3	Miscellaneous	107 048
126 140	15.	Conferences	211 029
73 447	16.	Training Programmes	107 401
42 143	17.	Electronic Data Processing	85 485
	18.	Library	
138 408	18.1	Books	170 203
109 990	18.2	Other Expenses	71 297
	19.	Office Expenses	
1 029 149	19.1	Stationery	784 604
391 366	19.2	Postage	422 924
671 109	19.3	Telephones and Telex	757 927
108 272	19.4	Recruitment	181 670
86 332	19.5	Refreshment and Entertainment	99 005
109 057	19.6	Liveries	90 007
209 706	19.7	Conveyance and Cartage	377 089
88 959	19.8	Insurance and Bank Charges	107 272
362 558	19.9	Miscellaneous	247 176
	20.	Furniture and Equipment	
174 441	20.1	Furniture	181 384
255 577	20.2	Equipment	308 929
213 686	20.3	Repairs and Maintenance	184 283
	21.	Buildings	
727 507	21.1	Rent and Taxes	807 852
618 770	21.2	Electricity and Water Charges	732 913
283 042	21.3	Maintenance	363 611
38 183 663		Carried Over	43 096 921

PAYMENTS — Contd

PREVIOUS YEAR Rs	SL NO.	HEADS OF PAYMENTS	AMOUNT Rs
38 183 663		Brought Forward	43 096 921
—	22.	Local Transport	
		22.1 Vehicles	—
199 371		22.2 Maintenance	264 801
40 647	23.	Audit Fee and Legal Charges	56 619
4 914	24.	Staff Training	67 416
230 250	25.	Interest on House Building Loan	280 480
250 000	26.	Investment Allowance Fund	336 000
	27.	Non-recurring	
		i) Laboratory Equipment	5 102 121
		ii) Central Laboratory Building at Ghaziabad	2 937 365
		iii) Bombay Office Building	564 116
		iv) Calcutta Office Building	61 688
8 659 327		v) GATT Project	109 241
383 328	28.	S & T Project	446 147
6 164 866	29.	Contra Items	5 710 573
	30.	Loans and Advances	
		30.1 Conveyance	107 133
		30.2 House Building	1 421 710
		30.3 Festivals	170 560
		30.4 Flood	16 424
		30.5 Adjustable	3 301 649
		30.6 TA	50 905
		30.7 Security Deposits	18 900
4 162 916		30.8 Earnest Money	83 359
308 704	31.	Purchase of Flats for Employees at Bombay	70 200
125 000	32.	Refund of Conveyance Loan	125 000
5 506 908	33.	Sundry Remittances	3 837 414
	34.	Closing Balance	
325 000		34.1 Deposits	325 000
5 898 407		34.2 Cash and Bank Balances	6 143 674
<u>70 443 301</u>		Total	<u>74 705 416</u>

ASSETS — Contd

PREVIOUS YEAR Rs	SL NO.		Rs	Rs	Rs
3 869 747		Brought Forward			3 742 481
	1.3	<i>Lab Bldg at Ghaziabad</i> (Under Construction)			
	a)	As per last Balance Sheet		10 199 415	
10 199 415	b)	Addition		<u>2 999 362</u>	13 198 777
	1.4	<i>Bombay Office Building</i> (Under Construction)			
	a)	As per last Balance Sheet		4 223 816	
4 223 816	b)	Addition		<u>564 116</u>	4 787 932
	1.5	<i>Calcutta Office Building</i>			
	a)	As per last Balance Sheet		3 050 947	
3 050 947	b)	Addition		<u>61 688</u>	3 112 635
	1.6	<i>Flats for Bombay Employees</i>			
	a)	As per last Balance Sheet		787 504	
787 504	b)	Addition		<u>70 200</u>	857 704
	1.7	<i>Xerox Copying Equipment</i>			
	a)	As per Cost Value		292 000	
	b)	<i>Less: Depreciation w/o</i>			
	i)	Up to 1981-03-31	203 541		
88 459	ii)	During 1981-82	<u>16 947</u>	<u>220 488</u>	71 512
	1.8	<i>Laboratory Equipment</i>			
	a)	As per Cost Value up to 1981-03-31	11 059 991		
	b)	Addition	<u>5 102 121</u>		
			16 162 112		
	c)	<i>Less: Depreciation w/o</i>			
	i)	Up to 1981-03-31	3 337 446		
7 722 545	ii)	During 1981-82	<u>1 063 063</u>	<u>4 400 509</u>	11 761 603
	1.9	<i>Furniture and Equipment</i>			
	a)	As per Cost Value up to 1981-03-31	4 808 459		
	b)	<i>Deduct: Cost of Assets disposed of</i>	<u>21 200</u>		
			4 787 259		
	c)	Additions (Includes Rs 1961 for GATT)	<u>492 274</u>		
			5 279 533		
	d)	<i>Less: Depreciation w/o</i>			
	i)	Up to 1981-03-31	2 254 227		
	ii)	During 1981-82	<u>397 197</u>		
			2 651 424		
2 554 232	iii)	<i>Deduct: Depreciation on Assets disposed of</i>	<u>17 183</u>	<u>2 634 241</u>	2 645 292
	1.10	<i>Vehicles</i>			
	a)	As per Cost Value up to 1981-03-31	600 374		
	b)	<i>Less: Depreciation w/o</i>			
	i)	Up to 1981-03-31	211 894		
388 480	ii)	During 1981-82	<u>77 696</u>	<u>289 590</u>	310 784
32 885 145		Carried Over			40 488 720

ASSETS — Contd

PREVIOUS YEAR Rs	SL NO.		Rs	Rs	Rs
32 885 145		Brought Forward			40 488 720
	1.11	<i>Library Books</i>			
	a)	As per last Balance Sheet	929 715		
929 715	b)	Additions	174 871		1 104 586
	2.	Investments (At Cost)			
	2.1	Deposits with Bank	325 000		
	2.2	Share of ISI Employees' Con- sumers Co-opt Store	7 500		
	2.3	Shares of Jay Engg Works (A/c K. L. Moudgill Prize Fund)	11 400	343 900	
	2.4	Pension Fund	11 927 946		
35 059 966	2.5	CPF	14 599 991		
	2.6	GPF	13 117 664	39 645 601	39 989 501
	3.	Current Assets			
	3.1	Stock of Printing Paper (At Cost)		966 375	
	3.2	<i>Sundry Debtors</i>			
	a)	Sale of Publications	902 514		
	b)	Bulletin Advertisements	118 491		
	c)	Licence, Inspection Charges, etc	269 167		
	d)	<i>Ministry of Finance</i>			
	i)	A/c Colombo Plan Trainees	124 930		
2 080 239	ii)	A/c SCAP Trainees	45 846	1 460 948	2 427 323
	4.	Loans and Advances			
	4.1	<i>Loans for</i>			
	a)	Purchase of Conveyances	255 432		
	b)	House Building	3 746 274	4 001 706	
	4.2	<i>Advances for</i>			
	a)	Festivals	86 460		
	b)	Flood	16 188		
	c)	Store Purchases, etc	444 659		
3 913 954	d)	TA	5 202	552 509	
	4.3	Security Deposits		155 713	4 709 928
	5.	Cash and Bank Balances			
	5.1	With Bankers (Including Rs 372 000.00 for BOs A/cs II & III)		6 025 894	
	5.2	In Hand (Including Imprest)		96 806	
5 898 407	5.3	Postage Stamps		20 974	6 143 674
80 767 426				Total	94 863 732

Sd/-
(A. K. Gupta)
Director General
Indian Standards Institution
New Delhi

Sd/-
(Raj K. Satia)
Director (Accounts)
Indian Standards Institution
New Delhi

APPENDIX B

PRINCIPAL OFFICERS OF ISI COUNCILS AND COMMITTEES (As on 31 March 1982)

General Council (GC)

President	RAO BIRENDRA SINGH Union Minister of Agriculture, Rural Reconstruction & Civil Supplies
Vice-Presidents	SHRI D. C. KOTHARI SHRI HARISH MAHINDRA
Director General	DR A. K. GUPTA

Executive Committee (EC)

Chairman	SHRI D. C. KOTHARI
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Finance Committee (FC)

Chairman	SHRI S. P. GUGNANI
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Agricultural & Food Products Division Council (AFDC)

Chairman	SHRI C. P. NATARAJAN
Vice-Chairman	DR N. A. RAMAIAH

Chemical Division Council (CDC)

Chairman	DR S. P. BHATTACHARYA
Vice-Chairman	DR M. S. VAIDYA

Civil Engineering Division Council (CEDC)

Chairman	SHRI N. S. L. RAO
Vice-Chairmen	PROF DINESH MOHAN SHRI PRITAM SINGH

Consumer Products and Medical Instruments Division Council (CMIDC)

Chairman	DR S. SRIRAMACHARI
Vice-Chairman	BRIG S. GONSALVES

Electronics and Telecommunication Division Council (LTDC)

Chairman	PROF S. SAMPATH
Vice-Chairman	LT-GEN D. SWAROOP

Electrotechnical Division Council (ETDC)

Chairman	SHRI S. G. RAMACHANDRA
Vice-Chairman	SHRI P. C. MANKODI

Marine, Cargo Movement and Packaging Division Council (MCPDC)

Chairman	SHRI S. PARMANANDHAN
Vice-Chairmen	SHRI A. RAY CAPT N. A. TAMHANE

Mechanical Engineering Division Council (EDC)

Chairman	MAJ-GEN R. JANARDHANAM
Vice-Chairmen	SHRI ABHIJIT SEN SHRI A. K. (GANGOPAI)HYA DR R. VASUDEVAN

Petroleum, Coal and Related Products Division Council (PCDC)

Chairman	DR D. BANERJEE
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Structural & Metals Division Council (SMDC)

Chairman	SHRI J. G. KESWANI
Vice-Chairmen	PROF V. A. ALTEKAR SHRI M. DHAR

Textile Division Council (TDC)

Chairman	SHRI D. N. SHROFF
Vice-Chairman	SHRI SURESH MEHTA

Certification Marks Advisory Committee (CMAC)

Chairman	SHRI V. P. PUNJ
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Advisory Committee for Standardization of Instruments (ACSI) Chairman	SHRI K. N. RAMASWAMY
Industrial Safety Advisory Committee (ISAC) Chairman	SHRI A. K. CHAKRABARTY
Environmental Protection Advisory Committee (EPAC) Chairman	SHRI B. B. VOHRA
Ahmadabad Office Advisory Committee Chairman	SHRI N. VITTAL
Bangalore Office Advisory Committee Chairman	SHRI S. G. RAMACHANDRA
Bhubaneshwar Office Advisory Committee Chairman	SECRETARY, INDUSTRIES DEPARTMENT, GOVERNMENT OF ORISSA
Calcutta Office Advisory Committee Chairman	SHRI B. K. JHAWAR
Hyderabad Office Advisory Committee Chairman	SHRI K. S. R. MURTHY
Kanpur Office Advisory Committee Chairman	SECRETARY (INDUSTRIES), GOVERNMENT OF UTTAR PRADESH
Madras Office Advisory Committee Chairman	SHRI D. C. KOTHARI
Patna Office Advisory Committee Chairman	INDUSTRIES DEVELOPMENT COMMISSIONER, INDUSTRIES DEPARTMENT, BIHAR
Trivandrum Office Advisory Committee Chairman	SHRI S. PEER MOHAMMED

STAFF**(As on 31 March 1982)**

Director General	DRA. K. GUPTA
Additional Directors General	SHRI A. P. BANERJI SHRI S. SRINIVASAN
Deputy Directors General	SHRI A. S. CHEEMA — Northern Region SHRI D. AJITHA SIMHA — Southern Region SHRI S. SUBRAHMANYAN — Eastern Region

DEPARTMENTS/SECTIONS

Agricultural and Food Products Director	SHRI T. PURNANANDAM
Chemical Director	DR HARI BHAGWAN
Civil Engineering Director	SHRI G. RAMAN
Consumer Products and Medical Instruments Director	DR A. S. SETHI
Electronics and Telecommunication Deputy Director/Head	SHRI R. C. JAIN
Electrotechnical Director	SHRI S. P. SACHDEV
Marine, Cargo Movement and Packaging Director	SHRI P. S. DAS
Mechanical Engineering Director	SHRI S. P. BATTOO
Petroleum, Coal and Related Products Director	SHRI M. S. SAXENA
Structural and Metals Director	SHRI C. R. RAMA RAO
Textile Director	SHRI S. M. CHAKRABORTY
International Relations Director	DR G. M. SAXENA
Accounts Director	SHRI R. K. SATIA
Personnel Management Secretary	SHRI C. K. BASU
Director	SHRI B. C. KAPUR
General Services Director	SHRI K. P. KHANNA
Central Marks Director I	SHRI C. B. CHANDORKAR
Director II	SHRI E. N. SUNDAR
Certification Marks (Delhi) Director	SHRI R. I. MIDHA
Implementation Director	SHRI M. RAGHUPATHY
Central Laboratory Director	SHRI S. K. KARMAKAR
Library Director	SHRI V. P. VIJ

Public Relations Deputy Director/Head	SHRI J. K. BHAVNANI
Publications Director	SHRI GURCHARAN SINGH
Statistics Director	SHRI Y. K. BHAT
Technical Information Service Deputy Director	SHRI T. S. SUBRAMANIAN
Legal Cell Director	SHRI GIRDHARI LAL
Computer Cell Deputy Director	SHRI D. S. AHLUWALIA
Eastern Regional Office Directors	SHRI H. P. GHOSE SHRI S. P. RAMAN DR A. K. BHATTACHARYA
Northern Regional Office Director	SHRI K. C. SHARMA
Southern Regional Office Director	KM H. N. MYTHILI
Western Regional Office Directors	SHRI S. R. KUPPANNA SHRI M. MURUGKAR
Ahmadabad Branch Office Director	SHRI Y. R. TANEJA
Bangalore Branch Office Director	SHRI N. SRINIVASAN
Bhopal Branch Office Deputy Director/Head	SHRI A. B. TEWARI
Bhubaneshwar Branch Office Deputy Director/Head	SHRI L. RAMACHANDRA RAO
Hyderabad Branch Office Director	SHRI L. G. BANERJI
Jaipur Branch Office Deputy Director/Head	SHRI N. C. TYAGI
Kanpur Branch Office Director	SHRI S. L. BALI
Patna Branch Office Director	SHRI G. S. VILKHU
Trivandrum Branch Office Deputy Director/Head	SHRI A. GOVINDAN