



STRATEGIC BUSINESS PLAN (SBP)

IEC/TC or SC 5	Secretariat Japan	Date 2010-12
-------------------	----------------------	-----------------

Please ensure this form is annexed to the Report to the Standardization Management Board if it has been prepared during a meeting, or sent to the Central Office promptly after its contents have been agreed by the committee.

Title of TC
Steam turbines

A Background

The scope of TC5 is defined as the preparation of specifications and standards for the rating and testing of steam turbines.

The question of rating and testing of prime movers of electrical generators was first discussed at the 1911 Turin plenary meeting. In 1927, IEC Advisory Committee 5, specifically for steam turbines, was formed.

At the Paris 1972 General Meeting it was decided to update publications 45 (Specification Steam turbines) and 46 (Acceptances tests steam turbines) and to prepare additional standards according to the needs of the industry. Working Group 1 for IEC Advisory Committee 5 was established and initiated this work in 1973.

Due in part to the energy crisis of 1985 the advancement in steam turbine technology slowed resulting in IEC TC 5 being placed in “stand-by” mode for many years.

With new installations in emerging countries and as steam turbines continue to dominate worldwide the generation of electrical power, the need for acceptable international standards has continued, resulting in the reactivation and transfer of the secretariat of IEC TC 5 to Switzerland in 2008. In 2009 the chairman was appointed from China and in 2010 the first plenary meeting in more than 10 years was held in Zürich, Switzerland.

B Business Environment

B.1 General

Due to the increasing demand for electric power, in particular recently from developing countries the capacity of steam turbine units is also required to increase. Large capacity highly efficient, clean steam turbines are now being rapidly developed. As a result of the developing steam turbine technologies as well as world wide trading and subcontracting of parts new contracts to address installation and efficiencies have had to be developed.

In view of the increasing demand for electric power and the advancement in steam turbine technology IEC TC5 will undertake the preparation of new and the revision of existing international standards to ensure they duly reflect the new techniques developed for the specification, rating and testing of steam turbines.

B.2 Market demand

Today the market in retrofitting older existing machines or components is comparable to that of the new machines of any size. A sound basis for international contracts and evaluation between international suppliers is essential in this market.

In addition rules covering the numerous implementations of combined cycle are also being requested.

TC5 has also recognised that some guidance on operational conditions would be of benefit, particularly to the fast growing independent power producers.

Considering the advancement in steam turbine technology over the last ten years, TC5 feels it is essential to expediate getting these technologies into the market place.

B.3 Trends in technology

Besides the development of the steam turbine plants, for which the standards for purchasing, design, manufacture, installation, inspection and acceptance tests must be adapted or created, there is to include the wide panel of the measuring and testing equipment where the impressive evolution of the recent years must be taken into account in several of our publications.

B.4 Market trends

For the increasing electric power demand in particular in merging countries and again in the traditional industrial regions, the research and development of steam turbines is on the good way; it is necessary to increase steam conditions, develop supercritical processes improving unit efficiency, in order to decrease the fossil fuels consumption and protect the environment. Developing supercritical steam will promote the use of new materials and welding procedures. Research of new equipment in cases of poor water resources will promote large capacity air-cooled steam plants.

In addition, building of nuclear power plants can improve design and research of full speed and half-speed turbine units, the design of exhaust hoods, last stage blades with application of new materials, research on tube bundle of moisture separators and development of large forging and welding parts.

TC5 will prepare and revise related standards based on demand of market requirement.

B.5 Ecological environment

As stated in sections B.1 and B.4, high efficiency units with energy-saving processes are requested. New plants with desulphuration, catalysts and soon CO₂ capture must become state of

the art for the environment protection. On the other hand, nuclear steam power plants will become again one of the main choices.

But the performance of a plant must be verified, not only at commissioning; the constancy of the quality during the life cycle has to be supervised, in particular under Build and Operate or similar contracts. For that purpose, rules for monitoring and diagnostics are essential. TC5 will follow all these trends in its future works.

C System approach aspects

TC5 will actively continue to promote the establishment of liaisons to other committees;

Other Committees (horizontal committees that produce standards Used by TC 5)	ISO/TC30	Measurement of fluid flow in closed conduits
Other Committees (horizontal Committees that produce standards used by TC 5)	ISO/TC43/SC1	Acoustics
Other Committees (committees that Produce standards similar to TC 5 to be in liaison with for technical consistency)	ISO/TC108	Mechanical vibration, shock and condition monitoring
Other Committees (committees that Produce standards similar to TC 5 to be in liaison with for technical consistency)	ISO/TC192	Gas turbines
Other Committees (committees that Produce standards similar to TC 5 to be in liaison with for technical consistency)	ISO/TC208	Thermal turbines for industrial application (steam turbines, gas expansion turbines)
Other Committees (horizontal committees that produce standards used by TC 5)	IAPWS	The International Association for the Properties of Water and Steam

A further liaison will be required with the ISO/TC11 "Boilers and Pressure Vessels" for general purposes in a steam power station, but newly in particular for dealing with combined cycle power plants which are actually and in the near future implemented frequently.

D Objectives and strategies (3 to 5 years)

1. To make TC5 work more effective and smooth after restart.
 1. Continue to develop and maintain standards necessary for manufacturers and the safety of users of steam turbines, national authorities responsible for such equipment safety and bodies responsible for certifying such equipment. Monitor market trends and develop the necessary requirements.
2. To update TC5 in time, to reflect new steam turbine techniques to suit demand of manufacturers and customers.
3. To make WG08 and WG10 to continue original work and try to restart WG09.

4. Motivate more members to join in TC5 actions
5. Do good consultation and development of steam turbine international standard

E Action plan

- Implement Working Group 11 with few core members, in charge to appoint ad hoc teams of experts for the various themes to be handled, according to the decisions of the PM of June 2010.
- Appoint teams for reactivation of the works of the former WG 8 to 10.

Useful links to IEC web site

[IEC/TC 5 dashboard](#) giving access to Membership, TC/SC Officers, Scope, Liaisons, WG/MT/PT structure, Publications issued along with their Stability Dates, Work Programme and similar information for TC/SC's, if any.

Name of the secretary:

Maurice André MONTAVON