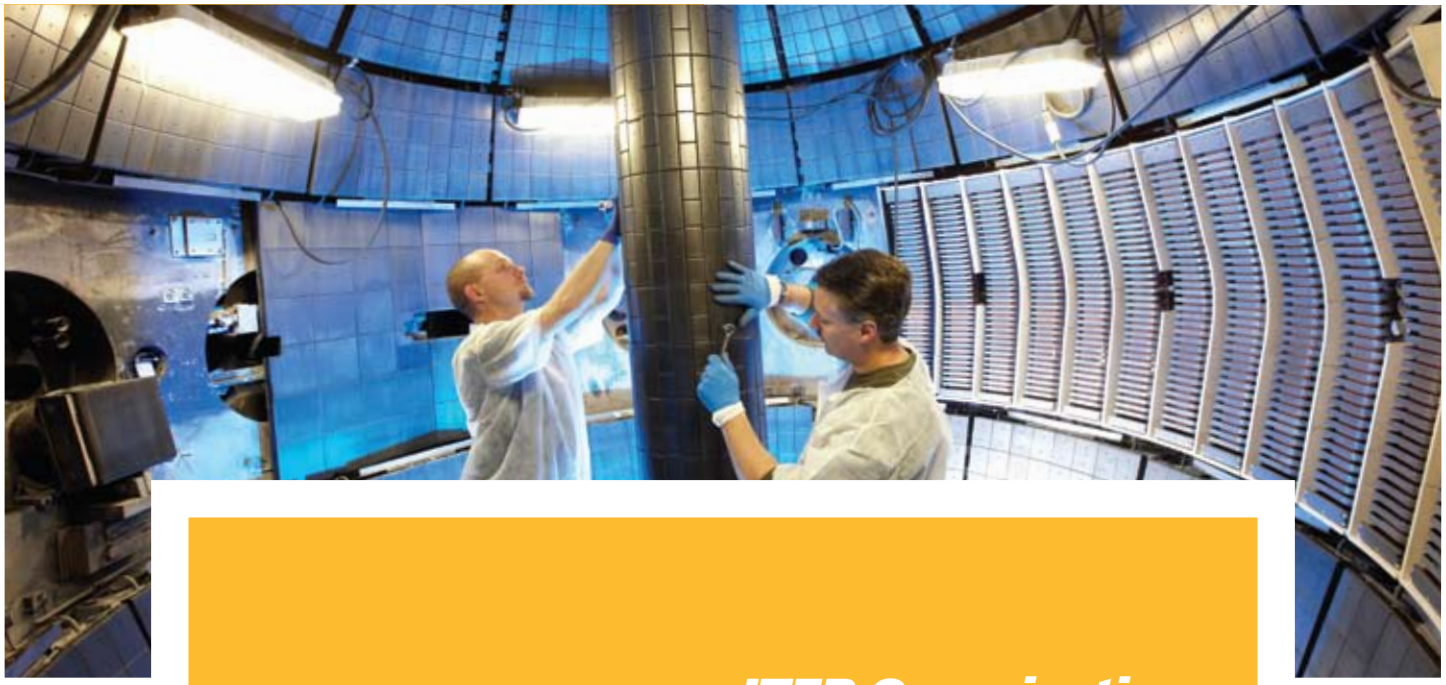
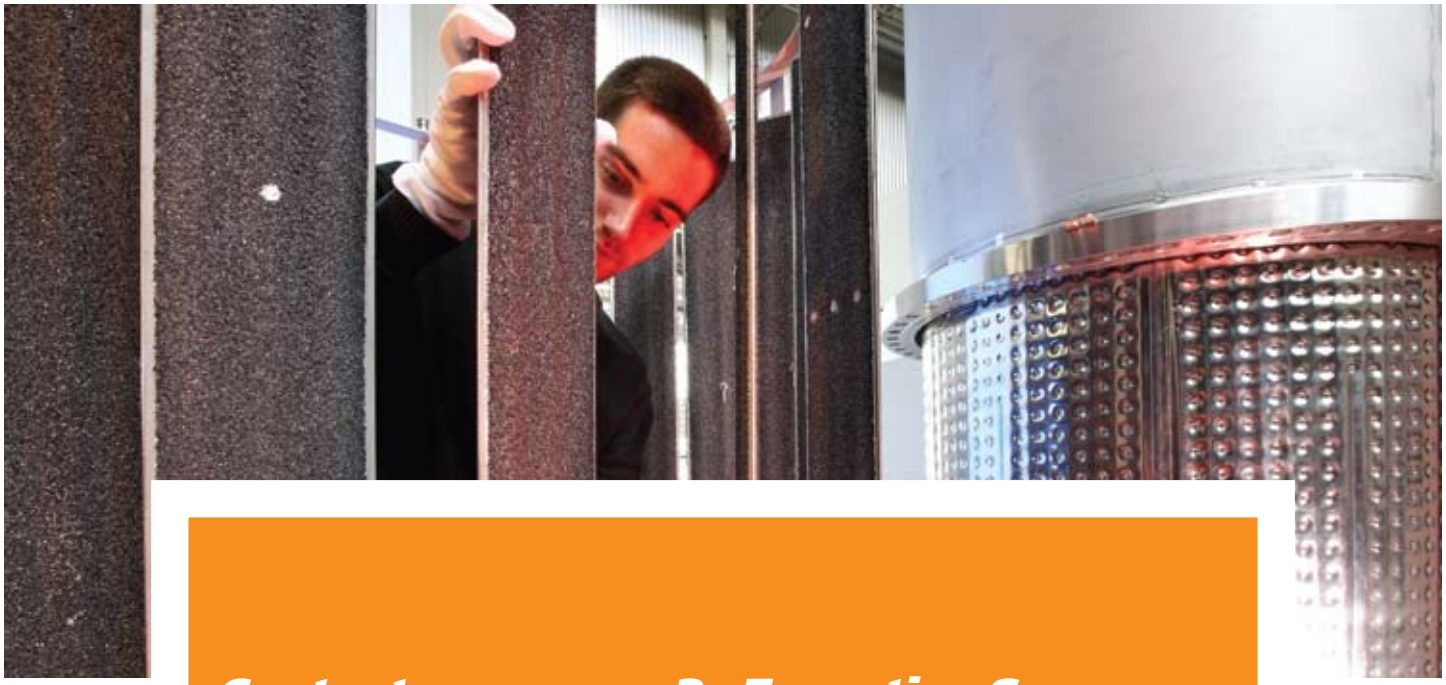


ITER Organization
2009 Annual Report

iter

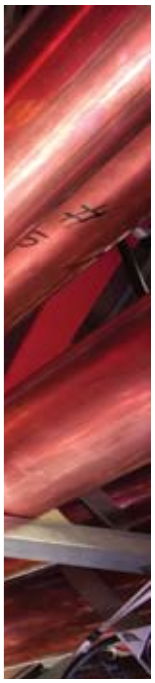


Contents

3 Executive Summary

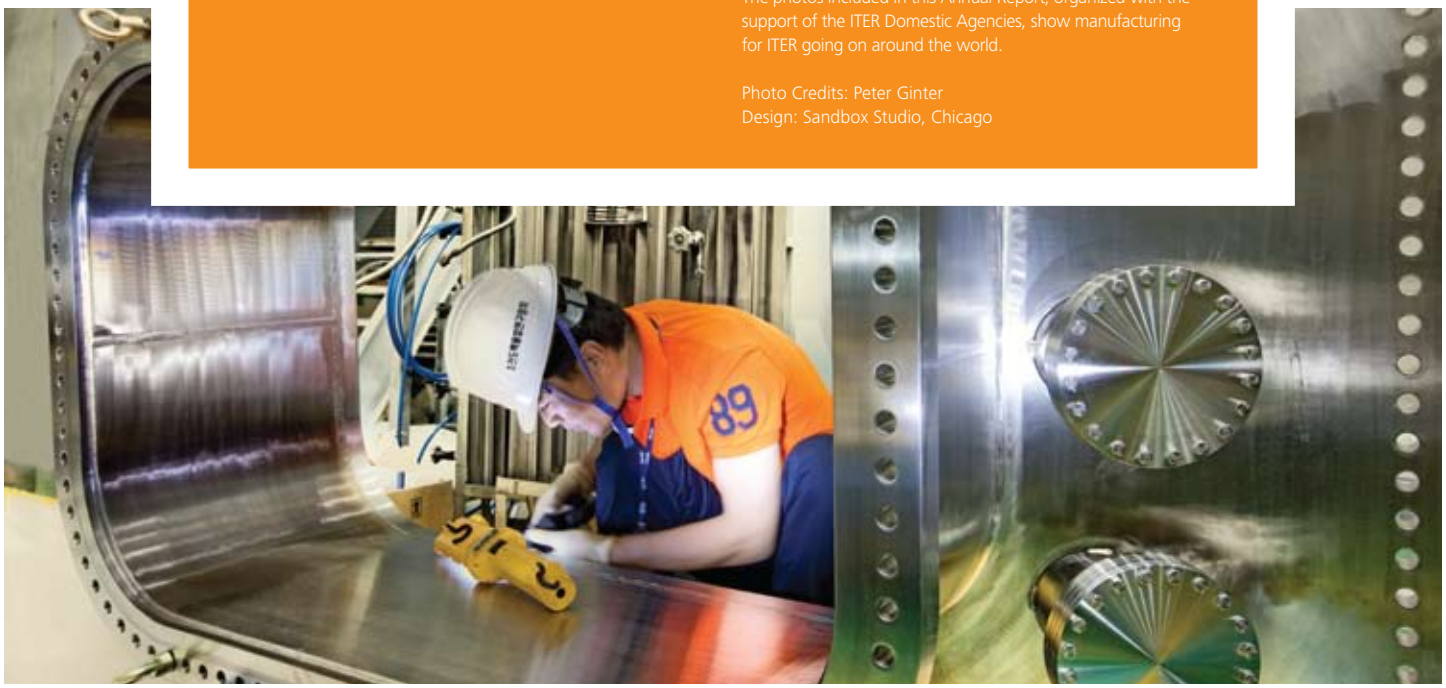
9 Highlights by Department

19 Staffing & Financial Tables



The photos included in this Annual Report, organized with the support of the ITER Domestic Agencies, show manufacturing for ITER going on around the world.

Photo Credits: Peter Ginter
Design: Sandbox Studio, Chicago



From the Chair of the ITER Council

During my two years as Council Chair ITER has made enormous progress. I encourage you to read this Annual Report carefully as it gives a clear outline of the achievements of the ITER management and staff during 2009. I would like to thank the ITER staff for their hard work and commitment. For decades fusion power remained a dream but with ITER that dream is now on the way to becoming a reality.

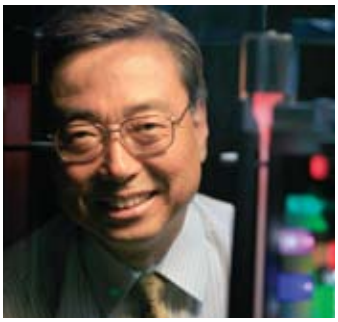
The ITER Council meeting at Cadarache in November 2009 was my last meeting as Council Chair. I think that all who attended would agree that it was not an easy session as agreement on the ITER schedule proved difficult to achieve. There was disagreement and frustration but the discussion ended with a way forward. I have confidence in the strength and ultimate efficacy of international collaboration, but it takes time to establish mutual confidence. It is only by bringing difficulties to the table and encouraging open discussion that solutions can be found. There will be more challenges to be faced as the project moves ahead, yet I know that the ITER community represented by the Council has a unified belief in fusion as an energy source of the future, and the common desire to succeed will overcome the difficulties. Meetings may not always be comfortable, but the ITER Council is forging a new precedent in international scientific communication and it has been a privilege for me to lead this effort.

ITER is now poised at the start of construction and installation. The volume will be turned up. The gentle tone of discussion and planning will suddenly be transformed into the roar of excavators and the churning of concrete mixers. It has been a long time coming and I am delighted by the prospect of watching the ITER buildings rising from the platform in 2010.

I wish ITER every success.

Sir Chris Llewellyn Smith F.R.S.
Chair of the ITER Council

From the Director-General



2009 was a pivotal year for the ITER Organization.

Successful design reviews were completed for critical components that allow us to have a high level of confidence in the design choices made for ITER. The thirteen priority design issues identified for resolution in 2007 by the Science and Technology Advisory Committee have been addressed, as well as recommendations for improved management from the independent Briscoe Panel.

The Baseline that describes the full technical scope, schedule and cost estimates of ITER was brought to near-completion in 2009 in a vast, organization-wide effort. Work to complete a feasible and reliable schedule and related cost estimates continues. Member support for this effort, which is critical to the ITER project, has been essential.

The ITER site stands completed and ready for the construction of the first ITER scientific buildings. Roadworks along the 106 kilometre Itinerary from Fos Harbour to the ITER site for the transport of massive components also advanced during the year, as did work to complete the International School of Manosque. Eighteen Procurement Arrangements were concluded in 2009, up from ten in 2008 and two in 2007, and manufacturing for ITER is accelerating around the globe.

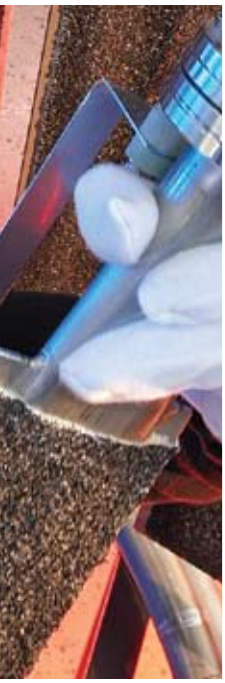
Since the formal establishment of the ITER Organization in October 2007, we have set up the management procedures and processes, the organizational structure, and the international team needed to manage such an ambitious project as ITER. ITER is first and foremost a human adventure, and the project is very fortunate to count among its staff experienced fusion scientists, engineers and project managers from the world over.

In all of our endeavours, we have benefitted from the expert counsel of our advisory boards, the Management Advisory Committee (MAC) and the Science and Technology Advisory Committee (STAC). I would like to acknowledge the outstanding work that has been done by the Chairs of the ITER Council, MAC and STAC, Sir Chris Llewellyn Smith, Bob Iotti, and Predhiman Kaw. Their devotion to ITER, and skills in bringing differing points of view into common agreement, has laid the foundation for a strong and balanced project.

In 2009 the governments of the ITER Members unanimously maintained their support for the project, in what was a difficult global financial context. Our international collaboration has withstood, and even emerged reinforced, thanks to increased expertise at the ITER Organization and improved collaboration with the Domestic Agencies.

Much has been accomplished in a short time. Exciting times lie ahead for the ITER project, and I hope that you will all join me in wishing the project continued success.

Kaname Ikeda
Cadarache, April 2010



ITER Organization 2009 Annual Report

Executive Summary

Executive Summary

Organization: 2009 was the ITER Organization's second full year of operation. Outstanding progress was made toward completion of the essential Baseline documentation and the finalization of the design, however uncertainty remains as to the overall project schedule that will require clarification in 2010. The Project Office was reorganized during the year, and a new Office for Central Integration and Engineering established to improve systems engineering and integration activities. The Systems Engineering Management Plan was finalized, which will provide a consistent and standardized structure for all the management, technical, and speciality engineering processes and activities at the ITER Organization.

The ITER Council met for the fourth time in Mito, Japan on 17–18 June, and again in Cadarache, France on 18–19 November. Meetings of the ITER Council advisory bodies—the Science and Technology Advisory Committee (STAC) and the Management Advisory Committee (MAC)—took place prior to each ITER Council meeting. Sir Chris Llewellyn Smith and Academician Evgeny Velikhov served their final terms as Chair and Vice-Chair of the ITER Council, ending 31 December 2009.

In their reports to the ITER Council, the Briscoe Panel and the Sub-group on Technical Integration (TIR) both noted positive momentum and improvement in the establishment and implementation of management systems, the establishment of cost and risk methodology, and collaboration with the Domestic Agencies. TIR also noted significant progress in technical integration and engineering activities. The Briscoe Panel was discharged by the ITER Council, having completed its mission. In 2009, the first ITER Management Assessment was carried out as stipulated by the ITER Agreement.

Monthly ITER Organization-Domestic Agency Coordination Meetings continued to be an important forum for communication with the Domestic Agencies in 2009. The Working Group on Export Control, Peaceful Uses and Non-Proliferation met twice during the year to discuss the control of sensitive information at ITER, and the first Export Control Awareness Training was held for ITER Organization staff to increase understanding on this issue. A contact group was also created during the year on intellectual property management.

The International Tokamak Physics Activity (ITPA) continued under the auspices of the ITER Organization, and was an invaluable forum in 2009 for keeping the international fusion physics community up-to-date on ITER's research priorities. Specific R&D actions were carried out under

ITPA Topical Groups. An Integrated Modelling Expert Group was created for the collaborative development of a world-class integrated modelling infrastructure to support the ITER research program.

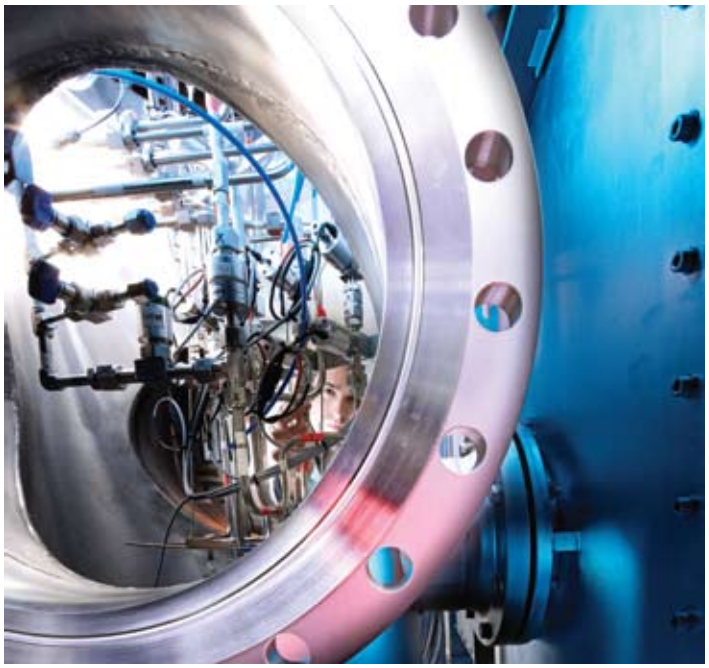
Construction Progress: The 42 hectare ITER platform was completed in April, after two years of clearing and levelling works under the management of Agence ITER France. With the exception of investigations carried out on the platform's soil and rock formation to prepare for the excavation of the Tokamak Complex, the platform sat quietly throughout the year.

Behind the scenes, however, work to pave the way for the beginning of design and building activities was ongoing. The ITER Organization transferred the Final Functional Requirements for all buildings to the European Domestic Agency, which is responsible for the construction of the buildings on the ITER platform. The completion of major building Procurement Arrangements in May allowed the European Domestic Agency to move forward with its own procurement. The first building to be erected on the ITER platform in 2010 will also be the largest—the 253 metre-long Poloidal Field Coil Winding Building.

Value Engineering work to implement cost and/or time savings continued in 2009. Improvements in hot cell design, the control building, and consolidation of the tokamak excavation support structure and seismic isolation basemat contracts are all examples of Value Engineering improvements. The Annex Buildings including the future ITER Headquarters building were rationalized to reduce cost.

The Itinerary for the transport of the exceptional components was all but complete at the end of 2009, with only finishing works remaining. The first test run along the Itinerary will be organized as part of the Global Transport contract. The ITER Visitors' Centre received 11 575 people in 2009, nearly triple the 2008 number. Construction began in December on a temporary office building adjacent to ITER Headquarters. Work was also completed on the executive meeting room at the Château de Cadarache.

Licensing: Significant headway was made in 2009 on the nuclear licensing files for the ITER installation. Following requests for additional information from the French Nuclear Safety Authority, the Preliminary Safety Report (RPrS) and Impact Study were updated to prepare for formal re-submission of all the safety files (DAC files) in the first months of 2010. An ITER Local Information Commission (CLI) was established



to provide information to the local public relative to the impact of nuclear activities on the ITER site. Preparations have begun for the Public Enquiry that will be an important step in ITER's licensing process.

The Agreed Notified Body in charge of the conformity assessment of the vacuum vessel as nuclear pressure equipment, acting on behalf of the French Safety Authority, gave its approval to the preliminary design of the vacuum vessel. Work will continue in order to obtain approval for the Modified Reference Design that was decided in July 2009.

ITER Project Baseline: Important progress was made during the year toward completion of the ITER design. A major design review was held mid-year for the vacuum vessel, which evaluated both the Baseline and the alternative designs. The recommendation to move forward on the basis of the Baseline vacuum vessel and blanket design (the Modified Reference Design) was endorsed by the Director-General. Work to resolve the issues relating to the design and integration of the in-vessel coils and the analysis of the nuclear heat load is ongoing.

The ITER Organization presented an updated Integrated Project Schedule to the June ITER Council that, for the first time, offered a fully-integrated view from construction through First Plasma in 2018 and Deuterium-Tritium operation in 2026. This was accepted as a foundation for further development of the Project Baseline. A phased approach to ITER construction, whereby the primary components of the ITER machine would be assembled and tested together before the progressive installation of in-vessel components, was approved by the Council.

An organization-wide effort followed to update the Project Baseline in alignment with the 2018 estimate. Despite this effort, agreement could not be reached on the schedule by all ITER Members, with questions persisting relating to risk. The ITER Council concluded by requesting the establishment of a realistic "early date" and "late date" for First Plasma by February 2010 to permit the finalization of the Project Baseline. The ITER Organization is also working on the reduction of management and support and direct investment costs by 10%, as requested by the Briscoe Panel.

The Test Blanket Module Program Committee, established by the November 2008 ITER Council, met twice during the year. The TBM port allocation was endorsed in June by the ITER Council; six Test Blanket Modules and associated systems will be installed in three dedicated equatorial ports.

Procurement Arrangements: 18 Procurement Arrangements were concluded in 2009, including many long-lead items critical to the project's schedule. The successful completion of many conceptual and final design reviews during the year prepared the way for a larger number of Procurement Arrangement signatures in 2010. In total, thirty Procurement Arrangements have been concluded to date, representing 39% of the value of in-kind contributions to the project.

Based on the success of Integrated Product Teams in improving collaboration between the ITER Organization and the Domestic Agencies on procurement, new teams were proposed during the course of the year in the areas of cryogenics, fuel cycle, electric power supply, heating and current drive, and instrumentation and control. Progress was also made on procurement optimization, with several proposed refinements approved. The ITER Organization worked on balancing the Members' contributions, taking into account the current status of procurement allocation optimization and the Additional Direct Investment.

Executive Summary

Manufacturing: Contracts were signed in all ITER Members in 2009 for components or site installations. The first 50 kilos of niobium-tin superconducting strands for ITER's magnet conductors were produced, tested and accepted in Japan, in what was a significant milestone for the project. Strand production is now underway in all Members, led by Japan, Korea and the Russian Federation, and jacketing facilities for ITER's conductors were completed in both Japan and China. The Magnet Division cleared the first Quality Assurance Authorization to Proceed Point of the ITER project for manufactured components.

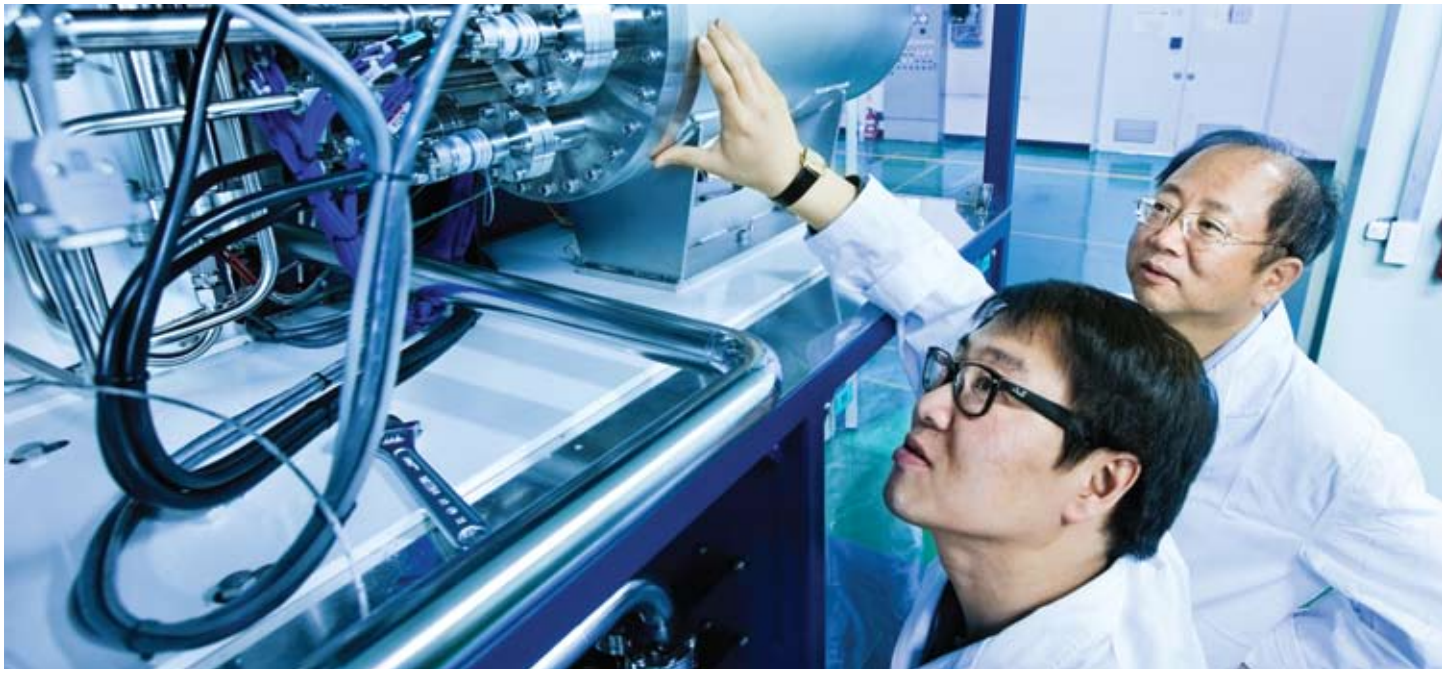
Important qualification activities continued in the magnet, blanket and divertor areas. Qualification mockups were successfully tested for the divertor vertical target and the first wall. A successful test of the first Chinese toroidal field conductor sample using niobium-tin strands also took place in 2009. The first quality assurance non-conformance issues were identified and resolved. As the project proceeds further into the construction phase, continued attention to quality requirements and appropriate monitoring will be essential. The Safety and Quality Assurance Working Group, established in 2008, continued to be an important tool for direct interaction between the ITER Organization and the Domestic Agencies on quality assurance issues.

The following decisions relative to central solenoid coil testing were made during the year: a central solenoid insert coil will be built and tested in Japan; the first central solenoid coil produced will be a prototype for testing and will be used subsequently as a spare; and all coils would be cold-tested. Finalization of financial arrangements and the schedule is ongoing.

R&D: During the year, important research and development work was carried out in support of the ITER project. The gyrotron for ITER's electron cyclotron system further extended the operating pulse of the prototype tube in tests conducted by the Russian Domestic Agency. Experiments to optimize the magnetic filter configuration of the negative ion source for the neutral beams began at the BATMAN test facility in Garching. A new concept for roughing pumps was proposed by the US Domestic Agency and validated. Shattered pellet injection for disruption mitigation was also successfully demonstrated. The preliminary results of experiments performed to investigate the possible impact on plasma performance of ferromagnetic material used in Test Blanket Modules indicated that a substantial impact on plasma performance is not anticipated. A brainstorming workshop was held on leak localization to identify promising techniques and to launch research and development tasks.

In November, the ITER Council approved the construction of a Neutral Beam Test Facility in Padua, Italy to finalize the development of the ITER neutral beam injectors. Work on the half-ITER-size radio frequency-based negative ion source ELISE began in Garching, Germany under a grant from the European Domestic Agency. Progress was also made during the year in investigating the different options for a Neutron Test Area for ITER neutron diagnostics.

Staffing: The ITER Organization continued to grow in 2009. Directly-employed staff numbers rose from 300 to 430, with staff arriving from all of the ITER Members (see Staffing Tables). The second ITER Staff Committee was elected in January, and a separate Health and Safety Committee established to promote the well-being and safety of all persons on site. Five Monaco-ITER Postdoctoral Fellows took up their two-year positions in 2009.



Finance: The final total of commitment appropriations for 2009 was EUR 139.964 million against which commitments of EUR 139.941 million were made, leaving a balance of unused appropriations of EUR 0.023 million to be carried forward to 2010. The payment appropriations for 2009 were set at EUR 137.176 million against which EUR 120.973 million were paid, leaving a balance of EUR 16.203 million which was transferred to the Special Account (see Financial Tables).

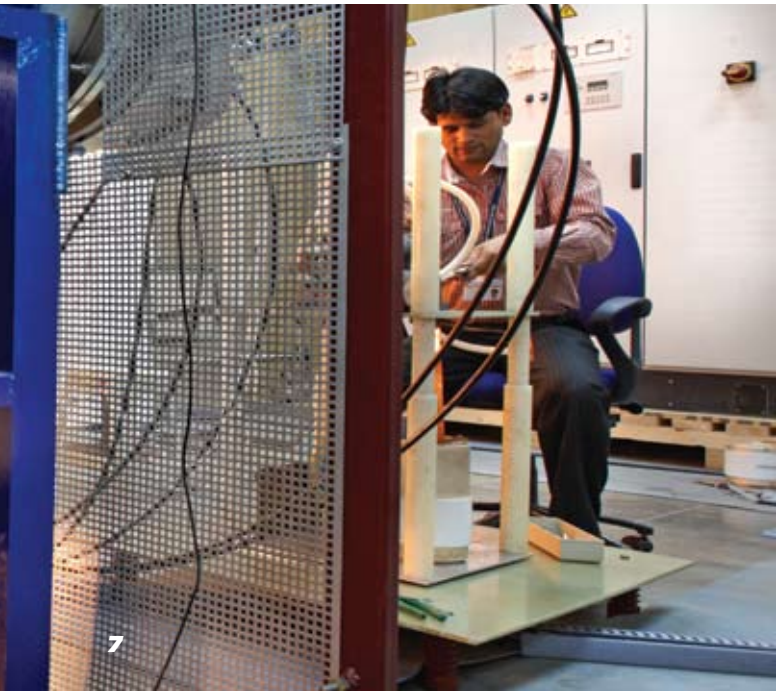
In addition to cash contributions, the resources of the ITER Organization also comprise in-kind contributions from the Members. During 2009, the in-kind contributions comprised credits for staff seconded by the Members, and Task Agreement credit allocations.

The Financial Audit Board, made up of independent experts from the ITER Members, returned twice to ITER in 2009. During its April visit, the Board found that the 2008 ITER Organization Financial Statements correctly reflected the financial activities of the Organization, and that they were in compliance with both the Project Resource Management Regulations and the Public Sector Accounting Standards.

Management Systems: The implementation of key management systems continued throughout the ITER Organization in 2009. Final systems were put into place to begin Earned Value Management reporting in 2010, which will allow the measuring of performance against the Project Baseline in terms of schedule and cost. Improvements were made to the SAP data management system for finance, human resources and procurement. Risk assessment and analysis tools now permit qualitative risk assessment of risk events, as well as quantitative risk assessment of schedule and cost.

A new communication platform, intranet, and public website were launched in 2009. The ITER Collaborative Network ICP recorded the one-millionth object in its database. The replication of the ITER CAD database to all Domestic Agencies was successfully pursued during the year, and will result in a truly global design office.

International School: The first phase of the construction project to build the permanent International School of Manosque was completed in September. Junior and senior high school students will join the lower grades in the new facility in September 2010, when the three-year, EUR 55 million construction project financed by the Provence-Alpes-Côte d'Azur Regional Council is completed. Enrollment increased to 299 students in 2009, of which 53% are the children of ITER families.



8

ITER Organization 2009 Annual Report

Highlights by Department

2009 Highlights

Office for Central Integration and Engineering (CIE): Following the reorganization of the Project Office in June, the Office for Central Integration and Engineering (CIE) was created to manage technical integration, CAD and design coordination, nuclear safety and environment, assembly and operations, and external coordination.

The CIE Office took over the development of the technical documents that comprise ITER's Technical Configuration Baseline, part of the full Project Baseline for the Construction Phase of ITER. This includes, but is not limited to, the Project Requirements, Plant Description, Configuration Management Models, Systems Requirements Documents, the Plant Breakdown Structure, Design Description Documents and Interface Control Documents. The organization-wide effort to update these documents took most of the year. An internal process for tracking and managing the technical baseline was established by CIE.

For each of its Divisions, the CIE Office produced new resource estimates and risk assessments, and contributed to top-level Baseline documents such as the Overall Project Cost and Overall Project Schedule. The first detailed resource estimate and schedule were prepared for machine assembly and plant installation, as well as scope statements to define clearly the tasks to be performed by the ITER Organization and the level of oversight for installation work performed by the Domestic Agencies. RAMI (Reliability Availability Maintainability & Inspectability) requirements for ITER systems were updated to ensure 60% inherent availability for the overall machine. The Assembly Tooling Procurement Arrangement was signed in August with Korea.

At monthly ITER Organization-Domestic Agency Coordination Meetings, discussions focused on technical integration, the structure of Baseline documents, change control, and management of interfaces and documents. Progress was made on procurement optimization, with several proposed refinements approved through the configuration management process. The net impact of these refinements on the project cost is included in the Additional Direct Investment (ADI). In collaboration with the Project Office, ADI costs were finalized and the top sixteen ADI prioritized. The largest impact ADI item is the Neutral Beam Test Facility proposed for Padua, Italy and approved by the ITER Council in November. Studies continue for Edge Localized Mode (ELM) and Vertical Stabilization (VS) coils, and cold coil testing. The ITER Organization has worked on balancing the Members' contributions, taking into account the current status of procurement allocation optimization and the ADI.

The sub-group on Technical Integration was organized under the Management Advisory Committee to review and assess the technical integration and engineering activities by the ITER Organization and the Domestic Agencies. The sub-group acknowledged the significant progress made in systems engineering and integration and supported its further implementation.

The CIE Office organized the Vacuum Vessel and Blanket Design Review during which the important decision to move forward on the basis of the reference vacuum vessel and blanket design (the Modified Reference Design) was made. The Office took charge of the design studies following the review for integration issues with other systems, and with interfaces, assembly, maintenance and remote handling. Particular effort was required in the integration of the ELM-VS coil design into the latest vacuum vessel and port geometry. Technical Coordination Meetings were held regularly to address integration/interface-related design issues.

CIE contributed to the updating of the configuration models of the Tokamak Complex and auxiliary buildings to support the preparation of the architect engineering design by the European Domestic Agency. The Office proposed the formation of a building integration team responsible for completing layout and interfaces for each plant system zone inside the buildings; this will be discussed further for implementation next year. More than 1000 approved models are now in the Enovia CAD database for the Tokamak Complex. The deployment of the Enovia replication system to all Domestic Agencies was pursued throughout the year. CIE supported the production of the CAD data for the design reviews and conclusion of Procurement Arrangements. The development of a number of CAD catalogues for plant design and the deployment of a dedicated software for mechanical design (Cadenas) enabled the project to improve its standardization capabilities.

The Systems Engineering Management Plan was approved in October. This high-level document is part of the Value Engineering activity aimed at optimizing building designs. CIE worked to reduce the cost of operating and maintaining the machine by enforcing the use of similar inter-changeable components throughout several plant systems.

Throughout the year, necessary changes to the ITER Data Management System (IDM) were implemented. In a joint project with IT and Communication, the Document Control Centre promoted and launched the integration of IDM, the technical-web and the new intranet for ITER staff (Buzz) onto a single platform. CIE also cooperated in an effort to

improve the overall information security at the ITER Organization, following the issuing of a revised policy on the handling of sensitive information.

Work continued in the Nuclear Safety and Environment Division to update the safety and licensing "DAC" files including the Preliminary Safety Report (RPrS), supported by new and revised safety analyses and environmental studies. Details can be found under the SAS Department heading.

Project Office (PRO): The Project Office was reorganized in June to concentrate fully on project management and control, the development of an integrated lifecycle performance baseline, and the maintenance of baseline configuration.

The Office provided technical support for ITER's project management systems, including Primavera (scheduling), WinEst (cost estimating), Pertmaster (risk management), Cobra (budgeting), SAP and SharePoint. A Project Management Reporting System was made available in December integrating the SAP, Cobra and Primavera systems to provide web-based access to cost and schedule performance data.

The first draft of the Performance Management Baseline, part of the full Project Baseline for the Construction Phase of ITER including structure, scope, schedule, cost estimate, risk and management documents, was presented to the Briscoe Panel and MAC in October, following intense effort across the entire organization. This included an updated Management and Implementation Plan, Project Control System Description, and Project Plan and Resource Estimates documents. A review of the draft was subsequently undertaken to implement Briscoe and MAC recommendations. The Performance Management Baseline, once finalized, will be an important management tool for the ITER project team, MAC and the ITER Council.

The Project Office prepared an updated Integrated Project Schedule covering approximately 10,000 ITER Organization and Domestic Agency activities and presenting, for the first time, a fully integrated view from construction through First Plasma in 2018 and Deuterium-Tritium operation in 2026. This updated schedule was accepted by the June ITER Council as a foundation for further development of the Project Baseline.

The Office worked in close collaboration with the Domestic Agencies to identify delivery dates and activity timelines to meet this 2018 First Plasma date. The resulting draft Integrated Project Schedule was presented to the Briscoe Panel and MAC in October and the ITER Council in November. Agreement could not be reached among all Members on the schedule due to questions that persisted on risk. Council requested that further work be done to examine potential technical or cost risks through consultation with the Domestic Agencies and suppliers in order to establish a realistic "early date" and a "late date" for First Plasma. A major Schedule/Risk Workshop was held in December to prepare this "early" finish date by February 2010.

Significant progress was made in cost estimating in 2009. The Integrated Project Cost profile for the schedule was completed which included a cost estimate and associated resource profile for each of the 4,261 ITER Organization activities detailed in the Work Breakdown Structure. The first ITER Organization resource-loaded schedule that resulted from this exercise allowed the organization to perform advanced budget forecasts, resource analysis, and more robust cost uncertainty analysis.

The total ITER Organization cost estimate showed a reduction of approximately EUR 150 million over the lifecycle of the project. In its October review of the estimate, the Briscoe Panel recommended further development of Basis of Estimate documents used in the calculations, and a reduction of management and support and direct investment costs by 10%. The Project Office has begun to implement Briscoe and MAC recommendations, and will complete the 10% cost reduction by January 2010.

In 2009, the Project Office put the final systems and processes into place to begin Earned Value Management reporting in 2010. This new system will measure the progress of the ITER Organization and the Domestic Agencies against the Project Baseline in terms of schedule and cost and will be used to monitor performance, identify risks and performance issues, and to control project costs.

The Project Office also implemented new tools for risk assessment and analysis to permit qualitative risk assessment of risk events, as well as quantitative risk assessment of schedule and cost. Risk assessments were conducted within the ITER Organization and all Domestic Agencies. A Risk Analysis of the updated Baseline plan was presented in October. The Office will now focus on the development and implementation of risk mitigation plans for the highest-level risks.

High priority was again placed this year on the finalization of Procurement Arrangements. 18 Procurement Arrangements were concluded, many for critical long-lead items. Integrated Product Teams formed last year proved to be an effective tool for collaboration on in-kind procurement, and a number of new Integrated Product Teams were proposed in 2009.

Department for Tokamak (TKM): The Tokamak Department is responsible for completing the design of the tokamak systems, preparing procurement, and overseeing assembly, installation, and commissioning.

Progress was made throughout the year toward completion of the ITER design. Design reviews were held for systems on the critical path for the schedule, and were important drivers for moving procurement forward. Nine Final Design Reviews and five Conceptual Design Reviews were completed successfully in 2009.

The Department pursued work on the development of both the Baseline and the alternative designs for the vacuum vessel and the blanket. The priority for the Baseline design was to resolve open issues such as blanket loads on the vacuum vessel, the interfaces between the ELM/VS coils

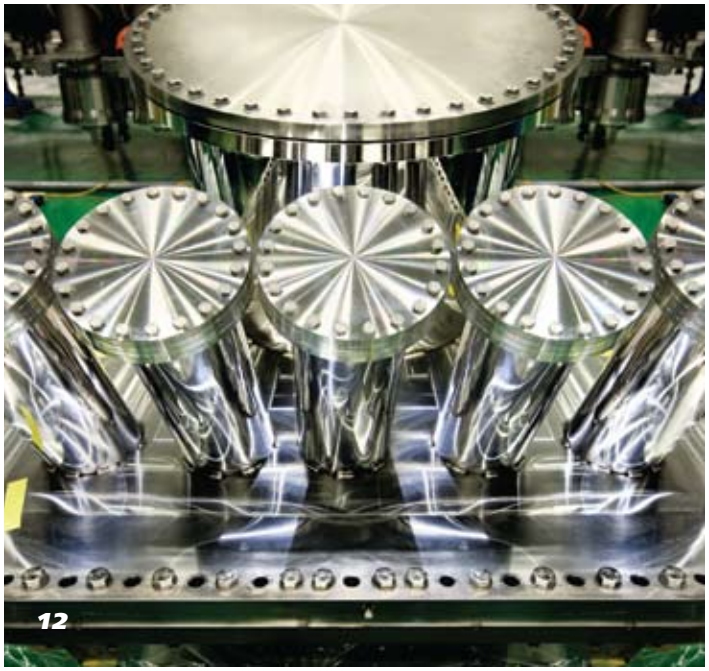
and the vacuum vessel, and neutron shielding. The Integrated Product Teams for both the blanket and the vacuum vessel were closely involved in this effort, which resulted in a Modified Reference Design. The Department also worked to finalize alternative design concepts to allow management to make the most informed decision possible.

The Vacuum Vessel Design Review meeting to assess the two choices took place in July. In its report, the review committee recommended moving forward on the basis of the Modified Reference Design, with the understanding that the design and integration of the in-vessel coils be satisfactorily resolved and the analysis of the nuclear heat load completed. This recommendation was adopted by the ITER Director-General. Soon after this review, the Procurement Arrangement for the final seven sectors of the vacuum vessel was signed with Europe.

Nine other important Tokamak Procurement Arrangements were signed during the year: the Poloidal Field Conductor and Poloidal Field Magnets with Europe; Inner Wall Shielding with India; the Divertor Outer Target and Central Solenoid Conductor with Japan; Vacuum Vessel Upper Ports, Divertor Dome and Poloidal Field Conductor with the Russian Federation; and the Toroidal Field Conductor with the US. In all, ten Tokamak Procurement Arrangements were signed in 2009, bringing the total for the Department to 21. The goal for the Tokamak Department for the year ahead is to finalize 14 others, including eight relating to magnets, three to vessel systems and three to in-vessel systems.

In October, a letter was received from the Agreed Notified Body acting on behalf of the French Nuclear Regulator that gave preliminary approval for the vacuum vessel design, based on its assessment of the Baseline design, pressure testing and all materials. The Department also received notification of the divertor's exemption from Nuclear Pressure Equipment (ESPN) regulations, and will apply for exemption for other ITER in-vessel components.

Full-fledged manufacturing has begun for ITER's magnets. Important milestones were achieved this year with the completion of the Japanese jacketing facility in Kita Kyushu, the beginning of superconducting strand production in Japan, Korea, the Russian Federation and China, and preparatory cabling and jacketing activities. The Magnet Division cleared the first Quality Assurance Authorization to Proceed Point of the ITER project. As procurement advances, support activities related to procurement will also increase for the Department. The ITER Organization is working together with the Domestic Agencies and manufacturers to make manufacturing-driven adjustments for cost minimization where possible.



Qualification activities continued in both the blanket and the divertor areas. Qualification mockups were successfully tested for the divertor vertical target and the first wall, representing the first step towards the required prequalification of the Members participating in these critical procurement packages. A successful test of the first Chinese toroidal field conductor sample using niobium-tin strands also took place in 2009.

A meeting to discuss central solenoid coil testing was held in August involving the ITER Organization and the Japanese and US Domestic Agencies. It was agreed that central solenoid testing would be a three-part process: a central solenoid insert coil would be built and tested in Japan; the first production central solenoid coil would be a prototype and would undergo testing and later used as a spare; and all coils would be cold-tested. Finalization of financial arrangements and the schedule are still in progress, but these decisions were an important step toward a final agreement.

Finally, a structural change took place this year in the Department as the Machine Assembly and Remote Handling sections were moved to the new Office for Central Integration and Engineering.

Department for CODAC & IT, Heating and Current Drive, Diagnostics (CHD): The CHD Department has responsibility for the Heating and Current Drive (H&CD), diagnostics and CODAC (Control, Data Access and Communication) systems that are essential to the correct and safe operation of ITER and the execution of the ITER physics program.

The CHD Department signed its first Procurement Arrangement this year. The Diagnostic Neutral Beam (DNB) Power Supply Procurement Arrangement was signed with the Indian Domestic Agency in April, closely followed in July by the conclusion of the low-voltage Neutral Beam Power Supply Procurement Arrangement with the European Domestic Agency. Preparations for the procurement of the DNB beamline, the ion cyclotron radio frequency power source, and the high voltage power supply also neared completion in 2009. Two new Integrated Product Teams were established during the year to streamline procurement procedures in the areas of H&CD and Instrumentation and Control (I&C).

The proposed Neutral Beam Test Facility obtained ITER Council approval for construction in Padua, Italy in November. The role of the facility will be to finalize the development of the ITER neutral beam injectors, with the aim of minimizing risk and commissioning time. Technical and design meetings were launched between the European and Indian Domestic Agencies, the RFX Consortium and the ITER Organization.

A kick-off meeting was also held for the ELISE experiment, the half-ITER-size radio frequency-based negative ion source that will begin operating in 2011 in Garching, Germany. Work on ELISE began under a grant from the European Domestic Agency. The gyrotron for ITER's electron cyclotron system from the Russian Domestic Agency further extended the operating pulse of the prototype tube achieving up to 400 seconds at output powers up to 0.6MW. Experiments have also begun at the BATMAN test facility in Garching to optimize the magnetic filter configuration of the negative ion source for the neutral beams.

The Diagnostic Division made progress during the year in investigating the different options for a Neutron Test Area for ITER neutron diagnostics. The possibility of upgrading the IRSN (Institut de Radioprotection et de Sûreté Nucléaire) facilities at Cadarache is currently the focus of examination. The Neutron Test Area will be necessary for the long-term calibration of the neutron diagnostics at ITER.

The stages of the Diagnostic system installation were reviewed this year against the updated Schedule. Work will continue to develop measurement requirements for First Plasma operation that will dictate the diagnostics systems needed for initial operation. Specific R&D tasks are ongoing to reduce the risk in diagnostic performance. An initial risk assessment of risk associated with ITER's diagnostic first mirrors was completed successfully.

The CODAC Section continued to work intensively on the definition of standards for ITER's control systems. A catalogue of standards for slow controls addressing conventional, interlock and safety controls was issued. A contract with the Chinese Domestic Agency to develop a Plant System Simulator for fast controls was finalized, and work has begun.

The one-year selection process for standard Programmable Logic Controllers (PLC) was concluded in April. Guidelines for Instrumentation and Control (I&C) signal processing were finalized and will be included as a satellite document in the next version of the Plant Control Design Handbook (PCDH). Also in 2009, CODAC made the decision to base its operations on the open source software environment EPICS (Experimental Physics Instrumentation and Control System), widely used in the experimental physics community. EPICS will play a fundamental role in moving CODAC from conceptual to engineering design.

The IT Section successfully migrated all ITER data to a new server room at ITER Headquarters. A nightly backup of all critical data is now performed and housed at the European Domestic Agency computer centre in Barcelona. IT worked throughout the year to replicate the ITER CAD database at the Domestic Agencies, with the aim of establishing a global design office for ITER. In October, ITER Collaborative Network ICP registered the one-millionth object stored in its database.

Civil Construction and Site Support Office (CCS): The mission of the CCS Office is to ensure that the site infrastructure and buildings required for the ITER facility are designed and constructed in a timely and cost-efficient manner, and in accordance with specified requirements.

2009 marked the end of preparatory works on the ITER site. The 42 hectare ITER platform was completed in April, bringing to a close two years of intense activity.

A Conceptual Design Review of all ITER buildings and site infrastructure took place early in the year that was followed by an Office-wide effort to update System Requirements Documents, Design Description Documents, Interface Control Documents, 3D models and drawings. This preparatory work cleared the way for procurement with the European Domestic Agency, which is responsible for the construction of all buildings. Three Procurement Arrangements were signed in May: Architect Engineer Services, covering the design of all buildings and site infrastructure; Anti-Seismic Bearings for the Tokamak Complex; and Excavation of the Tokamak Pit including the design and construction of the reinforced concrete retaining wall. Added to the signature for the Poloidal Field Coil Winding Building completed last year, this brings to four the number of Procurement Arrangements signed by the Office to date. The completion of these Procurement Arrangements has allowed the European Domestic Agency to move forward with its own procurement.

The CCS Office was able to complete all building Final Functional Requirements necessary for the detailed design of the buildings. This milestone represents the handover of responsibility for the design from the ITER Organization to the European Domestic Agency. On the basis of these requirements, the European Domestic Agency issued a call for tender for the Architect Engineer contract, with the aim of having the contract signed early in 2010.

Detailed design work for the tokamak excavation is ongoing in preparation for on-site activities to begin in early 2010. A design has been developed that combines the contract for the seismic isolation basemat with the tokamak excavation support structure, significantly lowering the risk of delay in these procurements. A final design review for tokamak excavation and support structure is planned for early 2010, prior to the start of construction in the summer. As part of the first phase of an Additional Site Investigation contract signed last year, some exploratory works were conducted on the site during the year to examine soil and rock formation.

Prequalification of bidders for the PF Coil Winding Building was completed. This will be the first building on the ITER site; further design work is planned in time for on-site construction works to begin mid-2010. Rationalization of the Annex Buildings adjacent to the main platform—including the future ITER offices—took place during the year. The Welcome and Communication services that were originally planned as independent buildings will be incorporated into the Main Office Building, allowing closer integration of the overall ITER team, as well as cost savings.

2009 Highlights

The CCS Office worked to prepare the last and perhaps most important Procurement Arrangement for the construction of all ITER Buildings and Site Infrastructure. This ongoing procurement, scheduled to be signed in 2010, will allow the European Domestic Agency to start the prequalification and tendering process for the contractors that will build the facilities.

The CCS Office continued Value Engineering work begun in 2008 to implement cost and/or time savings wherever possible. Improvements in hot cell design, the control building, and consolidation of the tokamak excavation support structure and seismic isolation basemat contracts are all examples of Value Engineering improvements.

In June of this year, the ITER Council approved a five-year framework contract with Jacobs Engineering to support the CCS Office in specialized areas. This support focused in 2009 on the capture and management of requirements; in the years to come it will shift towards on-site monitoring of construction activities. Between eight and ten man-years of effort per year will be provided through this framework contract.

While staffing of the CCS Office is now complete, the European Domestic Agency began to build its own team on the ITER site in 2009. As contracts are awarded, it is expected that it will have up to 150 staff and engineering contractors on site. Work began in December on a temporary office building adjacent to ITER Headquarters to house this expected staff, and also to provide additional office space for up to 100 ITER staff. The proximity of the CCS and European Domestic Agency teams will allow a more collaborative approach to the planning and implementation of the site and buildings, and the efficient transfer of information between the ITER Organization and the European Domestic Agency.

Department for Central Engineering and Plant Support (CEP): The CEP Department provides a fully-qualified range of services and facilities required for the operation of the tokamak device, including hot cell, cryogenics, cooling water, vacuum, tritium management, fuelling and wall conditioning, and the steady state and pulsed electrical power supplies.

In a major development in 2009, the first Procurement Arrangements for the Department were concluded. The Tokamak Cooling Water System was signed with the US Domestic Agency in June, and the Steady State Electrical Power Network (SSEPN) and the Pulsed Power Electrical Networks (PPEN) was signed with the European Domestic Agency in October. The creation of cryogenic, fuel cycle, and electrical power supply Integrated Product Teams was decided during the year to prepare and implement Procurement Arrangements.

The Plant Engineering Division continued its effort to optimize the design of the Hot Cell Facility in 2009. A design review workshop was held early in the year, followed by an external design review of the conceptual design in September. These reviews examined design options, functional requirements, and cost issues, as well as remote handling issues potentially affecting layout. The Hot Cell Facility operability study will continue into 2010, and further tasks launched for risk analysis. The analysis and optimization of the radwaste treatment and storage system was completed in 2009 and a final report issued in November.

Work progressed on the conceptual design for the ITER Cryogenic System. Department representatives attended the cool-down of the Korean tokamak KSTAR in September to gather useful information on the simplification or reduction of risk in the design of ITER's system. Heat loads and requirements were reviewed by experts and the involved Domestic Agencies prior to a design review in December to validate the proposed conceptual design. Interface and design documents were completed for the layout of the Cryoplant Building. The Cryogenic Safety Handbook and Safety Committee Charter were issued; the Cryogenic Safety Committee will be the first safety committee established at the ITER Organization.

Important work on roughing pumps was carried out during the year. These pumps will be needed to transport gas from the ITER device to the Tritium Plant and recycle gas in the pellet injectors. A new concept was proposed and validated at a meeting held in December with the US Domestic Agency. A Project Change Request will be prepared for the new concept early in 2010. Progress was also made on the torus cryopump during the year. Models were transferred to the European Domestic Agency who has the charge of bringing them to "built-to-print" status. One of the first tasks will be to optimize the pump valve sealing arrangement and to test some sealing arrangements.

A brainstorming workshop was held in May to identify promising techniques for leak localization, including spectroscopic analysis for water leaks, and a gas plug flow concept for leak localization in the thermal shield. Several R&D tasks were launched. Task Agreements were launched with the European Domestic Agency for the design of the Water Detritiation System and evaluation of the design of the Isotope Separation System.

Hazard and Operability (HAZOP) studies were concluded for all confinement areas to support Preliminary Safety Report (RPrS) development, including Tritium Plant Confinements Systems, Detritiation Systems, and Hot Cell Confinement. An R&D task with the Japanese Domestic Agency on pilot testing of wet scrubber technology made good progress. This technology is used to remove tritiated gases from atmosphere streams by scrubbing them with water. After successful demonstration to the French authorities, this technique will be used in the Tokamak Complex and the Hot Cell Building. Fuelling requirements including disruption mitigation were finalized. Shattered pellet injection was successfully demonstrated in DIII-D by the US Oak Ridge National Laboratory.

In the Electrical Engineering Division, work to improve the design of the AC/DC power converters for increased reliability and performance was conducted with the support of industry. Contracts were also signed for design and integration activities for reactive power compensators, coil power converters, and electrical power supplies. Work has begun to develop a cable management system for ITER.

Department for Safety and Security (SAS): The role of the Safety and Security Department is to manage all matters relating to safety, quality assurance and security, regulatory requirements, and compliance with respect to Host country safety and security regulations.

Meetings continued in 2009 with the Nuclear Safety Authority in France (ASN) relative to the nuclear licensing process. A one-day training session was given by the ASN to ITER Organization management and Responsible Officers. Work to update the Preliminary Safety Report (RPrS) and Impact Study progressed, coordinated by the Nuclear Safety and Environment Division with participation from Responsible Officers in the technical departments and external contractors. The English version of the updated RPrS was finalized in December, opening the way for review by external experts, translation into French, and formal submission of all the safety files (DAC files) in the first months of 2010.

Pursuant to discussions with French authorities on the applicability of Nuclear Pressure Equipment (ESPN) regulations to the ITER in-vessel components, an exemption for the divertor was formally requested and delivered. Lists of components potentially falling in or out of the scope of these regulations were prepared for submission with the Preliminary Safety Report.

The SAS Department will be in charge of next year's Public Enquiry that is part of ITER's licensing process. In December, the first meeting of the ITER Local Information Commission (CLI) took place. The ITER CLI's mission is to provide information to the local public relative to the impact of nuclear activities on the ITER site.

The Safety and Quality Assurance Working Group, established in 2008, brought ITER Organization and Domestic Agency safety and quality officers together four times during the year to report on the status of the ITER licensing process and the implementation of quality requirements in the first ITER Procurement Arrangements. This working group continues to be an important tool for direct interaction between all parties.

In November and December, the Quality Assurance Division worked closely with several Domestic Agencies to resolve the first non-conformance issues that arose relating to the lack of requisite quality documentation on the part of manufacturers. Visits to the relevant Domestic Agencies and their suppliers resulted in the resolution of the issues and acceptance of the non-conforming items by the ITER Organization.

The Chinese Domestic Agency received approval during the year from the ITER Organization for its Quality Assurance program. Approval has now been granted to all seven Domestic Agencies. An audit program was put in place under which the ITER Organization and Domestic Agencies will be monitored for compliance with requirements within Procurement Arrangement and Task Agreement documentation. Audit training is also being provided to selected staff within each Domestic Agency on request.

The new Management and Quality Program (MQP) web page came on line this year, with approved procedures and policies available for general consultation. This web page is a work in progress, and will continue to be enriched throughout the life of the project.

As part of the continuous work towards safety training, a program on the main principles of nuclear safety including the French Quality Order (10 August 1984) was held for Responsible Officers at the ITER Organization, and extended to Domestic Agencies in the second semester of the year. In all, 187 people received this training. A risk assessment was performed for the ITER site and the International School of Manosque, in collaboration with French security agents. A nuclear accident exercise was also held during the year to test emergency procedures for ITER Organization staff on the CEA and ITER sites.

The SAS Department managed the H1N1 flu pandemic response this year. One suspected case of H1N1 occurred in September, and the voluntary vaccination of ITER staff and their families was offered beginning December. The first meeting of the ITER Committee on Health and Safety took place during the year.

Department for Fusion Science and Technology (FST): The FST Department is responsible for all matters related to physics performance projection and the assessment of plasma-related specifications in support of ITER construction and operation. It also coordinates the Test Blanket Module program.

In 2009, the implementation of the Physics Work Program for ITER progressed. Calls for Task Agreements with the Domestic Agencies

were launched in several key areas such as plasma scenarios, plasma control and stability, plasma-wall interactions, H-mode pedestal physics and energetic particles. Discussions were held with the DIII-D, C-Mod, EAST, KSTAR and Tore Supra teams on experimental work in progress or in the planning stages in support of ITER physics R&D needs.

The International Tokamak Physics Activity (ITPA) continued to be an invaluable framework for internationally-coordinated physics research in support of ITER. The Department took advantage of regular ITPA Topical Group meetings to keep the fusion physics community up-to-date on ITER's physics research priorities and to plan specific R&D actions to resolve outstanding issues. In December, the FST Department participated in the 8th International Energy Agency/ITPA Workshop on Joint Experiments to review progress made during the year. A website for the ITER physics program is under development to make physics data available to the fusion community and the ITPA.

The FST Department coordinated the preparations for two STAC meetings that took place in May and October 2009 and contributed significantly to the Baseline documents that were presented, including contributions to the Project Specifications and Project Requirements, the development and approval of a fully-revised Plasma Performance Assessment, and the finalization of Heat and Nuclear Load Specifications. In collaboration with the Domestic Agencies and experts, the ITER Research Plan was revised during the year to address issues raised by the November 2008 STAC meeting and to adapt to the Updated Schedule. The Department also supported the project's licensing activities by responding to plasma-related questions raised by regulators and contributing to the safety files.

FST represented the ITER Organization at fusion workshops and conferences throughout the year. At the International Fusion Research Committee/Fusion Power Coordinating Committee meeting in Vienna, presentations were made to the international community on the status of the physics and technology aspects of the ITER design. A presentation on ITER and ITPA physics activities was also made to the 48th meeting of the IAEA International Fusion Research Council (IFRC) held in Vienna in October. The IFRC meeting provided an opportunity to discuss possible areas of collaboration between the ITER Organization and the IAEA within the framework of the Cooperation Agreement signed in 2008. The Department was also active in the organization of the 3rd ITER International Summer School in Aix-en-Provence and provided several of the lecturers.

The implementation of the Test Blanket Module (TBM) program was a priority for the FST Department during the year. The TBM Program Committee, established by the November 2008 ITER Council, met twice to discuss TBM activities and finances, and to provide recommendations to the ITER Council on TBM-related activities, TBM partnerships among the Members, and questions of intellectual property. In one major development, the TBM port allocation was endorsed in June by the ITER Council as recommended by the TBM Program Committee. Six TBMs and associated systems will be installed in three dedicated equatorial ports. Port Management Groups were established to define key near- and medium-term activities for the integration of the TBMs into the ITER device. The endorsement by the ITER Council in November of the responsibilities of the TBM Port Masters was another significant development for the TBM program.

Experiments were performed on the DIII-D device in San Diego to investigate the possible impact on plasma performance of ferromagnetic material used in TBMs. Involving an international team of experts led jointly by General Atomics and the ITER Organization, the experiments were conducted using a specially-fabricated coil configuration that mimicked the magnetic field perturbations produced by ferromagnetic steel. Detailed analysis of the experiments is continuing, but initial results indicated that at the level of magnetic perturbation produced by TBMs in ITER, substantial impact on plasma performance is not anticipated.

In complement to the DIII-D TBM mockup experiments, a design study relating to the implementation of correction coils on the TBM port frames was launched with the Indian Domestic Agency. This study examined ways to compensate for the ferromagnetic material in the TBM structures in case significant deleterious effects on plasma behaviour were observed on the DIII-D experiment.

The first meeting of the Integrated Modelling Expert Group was held at ITER in June, with representatives from each of the ITER Members in attendance. The objectives, progress and plans for ITER Integrated Modelling were reviewed, integrated modelling efforts in each of the Members' organizations were presented and discussed, and priorities were established for collaborative development of an Integrated Modelling Program to provide a world-class integrated modelling infrastructure to support the ITER research program.

A Plasma Control Workshop was held in December that reunited 30 plasma control experts from all seven of the Members' fusion communities and about 20 representatives from the ITER Organization. The workshop reviewed the current state-of-the-art in plasma control and laid the basis for the launch of the ITER Plasma Control System conceptual design in 2010.

In February 2009, two Monaco Postdoctoral Fellows joined the FST Department—one contributing to the analysis of the plasma control system requirements, and the other contributing to studies in plasma-wall interaction issues that impact the design of the ITER first wall. The FST Department also coordinated the launch of the second competition for the Monaco Postdoctoral Fellowships in December 2009.

Department for Administration (ADM): The Administration Department ensures that the ITER project and the ITER Organization operate within the agreed value estimates, budgets and schedule, and in compliance with the Rules and Regulations approved by the ITER Council.

Substantial progress was made in the use of SAP, the data management system for finance, human resources and procurement. The effort

to upload all ITER historic financial data was concluded in December with the creation of a new SAP production environment. An Earned Value Management tool—Cobra—was set up and structured in order to monitor commitments and payments and perform budget analyses. By the year's end, ITER Organization Responsible Officers had direct access to their line-by-line budgetary situations. Work continued to define the interfaces between the Primavera scheduling tool, Cobra and SAP and to specify reporting procedures and requirements.

Council approved the Implementing Measures relating to the Project Resource Management Regulations (PRMR) which give a detailed description of the applicable rules for the ITER Organization, covering contributions in kind, cash income, commitments and payments. Council also approved amendments to the PRMR and staff regulations.

As part of the Management Quality Program process, procurement procedures were reviewed, and a new procurement tracking system and supplier database were introduced to improve performance and further develop communication tools. The web-based Procurement Portal went live in May, allowing applicants to enter purchase requests from anywhere in the world. Measures were taken to improve the competitive process by dramatically reducing the percentage of single tenders.

The Procurement and Contract Division placed approximately 560 contracts and 550 orders during the year, in particular in the fields of design, engineering, R&D and project management. Working sessions and seminars were implemented in order to develop a common understanding of procurement procedures for all concerned staff.

The Human Resources Division managed the recruitment of 140 directly-employed staff, bringing the ITER staff total to 430. An e-hiring tool was developed in collaboration with the Domestic Agencies to further streamline and automate the recruitment process. The Division collaborated with the technical departments on the development of an ITER Organization job classification aiming to improve consistency in future recruitment activities.

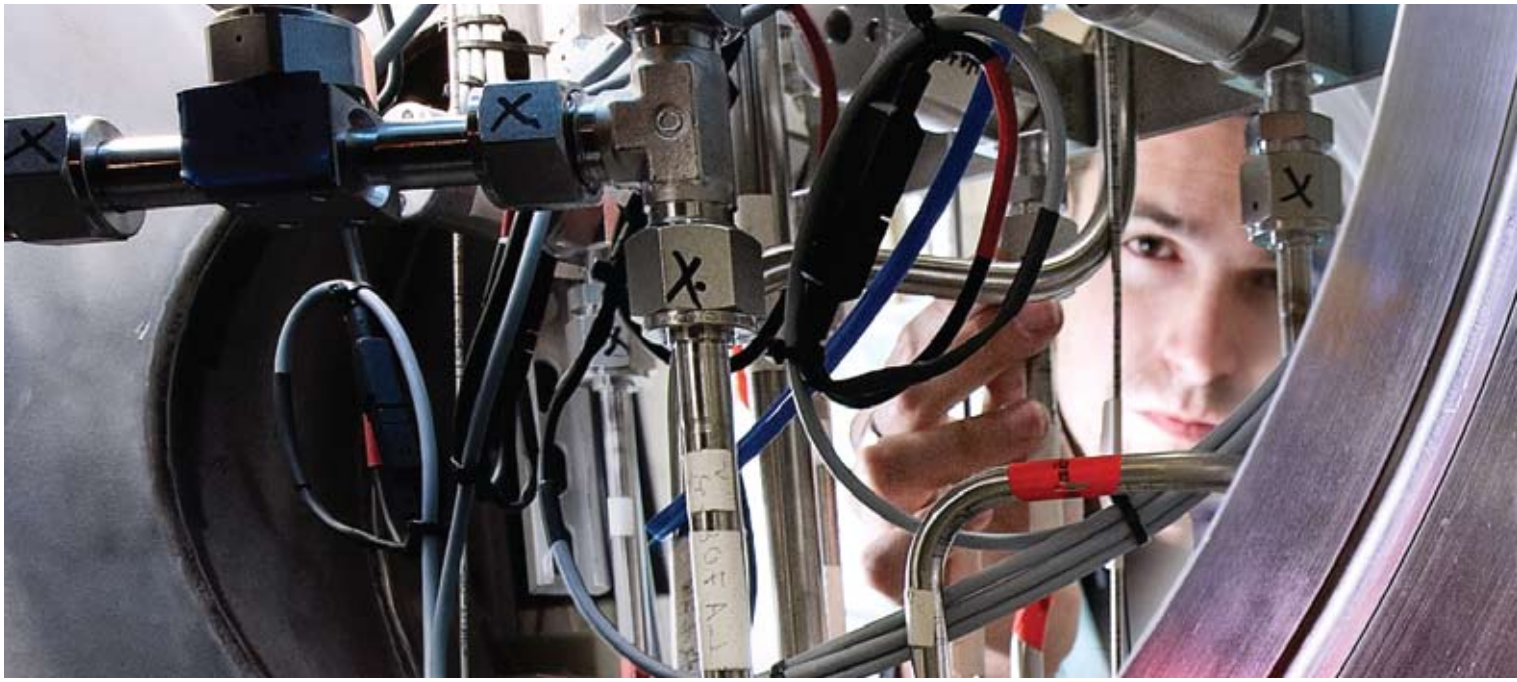
The Human Resources SAP portal was implemented to introduce on-line workflow for such activities as leave requests, management of the annual appraisal process, and management of the probationary period for new staff. A timesheet function was also developed to track closely the working time spent by ITER staff on project tasks and to provide more reliable data for Earned Value Management. The first ITER Organization training plan was developed and 360 staff were trained, mainly in safety and security. A two-day mandatory Induction Training was created for newcomers, and held regularly throughout the year.

The second ITER Staff Committee was elected in January to represent the professional interests of all ITER staff related to employment working and welfare conditions. A Health and Safety Committee met for the first time at the end of 2009, aiming to develop and promote a healthy and safe environment on ITER premises as well as to contribute to the occupational health and safety of all persons undertaking professional activities on the ITER site.

The Finance and Budget Division issued the Organization's 2008 Financial Statements early in the year. In April, the Financial Audit Board examined whether these Financial Statements correctly reflected the financial activities of the Organization and whether they were in compliance with both the Project Resource Management Regulations and the Public Sector Accounting Standards. Following its review, the Board pronounced its satisfaction, and complimented progress made since the previous year. The ITER 2008 Financial Statements were approved by the ITER Council in June. The Board returned to the ITER site for a September interim visit to prepare for the audit of the 2009 accounts. In addition, it planned for the audit of ITER's information system, and in particular the system's security.

The Management Advisory Committee approved the final 2009 conversion rate of 1 IUA = EUR 1.54759 thousand and the provisional rate of EUR 1.59866 for 2010. All Members settled their 2009 contributions by October. Following the approval of the 2010 budget by the November Council, the Finance and Budget Division sent targets based on the resource estimates. The ITER Organization met its 2009 target for commitments by consuming 100% of the available budget. The remainder of the payments budget of EUR 16.2 million was transferred to the special account to assist with payments against open contracts.

The increasing numbers of on-site staff taxed the Logistics team this year as it was faced with the need to accommodate all departments' needs. Construction began on the JWS3 temporary building adjacent to ITER Headquarters. When completed in June 2010, it will provide additional office space for ITER staff as well as offices for the European Domestic Agency staff and their contractors. Work was completed on the executive meeting room at the Château de Cadarache in April.



ITER Organization 2009 Annual Report

Staffing & Financial Tables

Staffing & Financial Tables

Staffing Tables

by Nationality

Member	31/12/2008	31/12/2009
China	15	17
Euratom	199	281
India	13	28
Japan	23	28
Korea	16	24
Russia	18	23
USA	16	29
Total	**300**	**430**

by Department *(as of 31/12/2009)*

Department	Professional	Support	Total
Department for Administration (ADM)	20	18	38
Civil Construction and Site Support Office (CCS)	11	3	14
Department for Central Engineering and Plant Support (CEP)	46	17	63
Department for CODAC and IT, Heating and CD, Diagnostics (CHD)	46	23	69
Office for Central Integration and Engineering (CIE)	60	41	101
Department for Fusion Science and Technology (FST)	20	2	22
Office of the Director-General (ODG)	12	9	21
Project Office (PRO)	10	6	16
Department for Safety and Security (SAS)	11	7	18
Department for Tokamak (TKM)	55	13	68
Total	**291**	**139**	**430**

Financial Tables

Summary of Commitments Account *(all figures in million Euros)*

2009	Commitment Appropriations	Commitments	Unused Commitment Appropriations carried forward to 2010
Title I: Direct Investment	3.000	3.000	0
Title II: R&D Expenditure	18.569	18.553	0.016
Title III: Direct Expenditure	118.395	118.388	0.007
Total	**139.964**	**139.941**	**0.023**

Summary of Payments Account *(all figures in million Euros)*

2009	Payment Appropriations	Payments	Unused Balance	Special Account at 31/12/09
Title I: Direct Investment	0.800	0.067	0.00	0.733
Title II: R&D Expenditure	20.177	12.855	0.00	7.322
Title III: Direct Expenditure	116.199	108.051	0.00	8.148
Total	**137.176**	**120.973**	**0.00**	**16.203**

In-kind Contributions by Member *(for Task Agreements—Credit Allocations for 2009)*

Member	In Mio Euro
China	0
Euratom	0.310
India	0.935
Japan	0
Korea	0
Russia	0
USA	0.075
Total	**1.320**

Secondments *(Credit Allocations for 2009)*

Member	In Mio Euro
China	0
Euratom	4.221
India	0
Japan	0
Korea	0
Russia	0
USA	0.430
Total	**4.651**

CS 90 046
Route de Vinon
13067 Saint Paul Lez Durance Cedex
France

www.iter.org