HISTORIC DAY FOR FUSION COMMUNITY

The Ministerial Meeting on the ITER site selection (MMI-2) took place in Moscow, Russian Federation, on 28 June 2005. About one hundred participants from the Parties to the ITER Negotiations and the IAEA attended the meeting. Over eighty-five representatives of radio and TV companies from ten countries took part in the press conferences arranged on the occasion of the meeting.

Mr. A. Yu. Rumyantsev, Director of Rosatom, welcomed the participants and pointed out that the goal of the meeting was to resolve the most difficult issue: to select the site for implementation of the ITER project. Once this decision had been taken, one could expect a swift and successful accomplishment of negotiations and beginning of work on the ITER construction. Mr. Rumyantsev invited the Heads of Delegations of Japan, the European Union, the People's Republic of China, the Republic of Korea and the United States of America to express the positions of their Parties on the choice of a site (see full text on page 2).
Mr. N. Nakayama, Japanese Minister of Education, Culture, Sports, Science and Technology, recognized that three years had passed since the start of Negotiations on the site issue and that a consensus on the roles of the Host Party and the Non-Host Party had been reached. It was therefore not desirable that both Japan and the EU still advocate their own sites and allow the Negotiations to continue with no prospect of coming to a conclusion. So, considering that the ITER project should be started as soon as possible for the future benefit of humankind, that the six-Party-framework for implementing the ITER project should not be broken, that the ITER project starting smoothly will be a major stimulant for international co-operation on science and technology in the twenty first century, and taking a broader view of the situation, Japan has decided that they will let the EU host the ITER site (see full text below).

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Welcome address by Mr. A.Yu. Rumyantsev, Director of Rosatom

Dear colleagues and meeting participants,

I am pleased to welcome you to this hall in Moscow. We have all been waiting and preparing for this meeting for a long time.

I take pleasure in recalling that the starting point for negotiations on the joint implementation of the International Thermonuclear Experimental Reactor (ITER) project was the informal meeting “ITER Days” which also took place in Moscow in June 2001, i.e. exactly four years ago. Negotiations were able to begin thanks to the successful completion of work under the ITER technical project, which was carried out under the aegis of the IAEA in accordance with the intergovernmental agreement of 1992 and the amended version thereof of 1998.

During the negotiations, four wonderful sites have been proposed for the construction of ITER, much work has been done on their joint assessment, the possible contributions of the Parties to the implementation of this unique project have been agreed upon to a large extent, and a draft future agreement has been drawn up. Over this period, the number of participants has increased from four to six.

All this shows that the Parties attach great importance to the implementation of this project, justifiably seeing it as a realistic path to opening up a new source of energy for the good of all mankind. This source will have attractive properties such as the practical inexhaustibility of the fuel resources, and the fact that it is environmentally clean and safe. I also take pleasure in recalling the fact that the first development work on tokomak magnetic plasma confinement systems was done by Russian scientists.

The ITER project has proved to be complex on both a scientific and a technical level, and as regards organization and funding; indeed, even politically. We have managed to overcome many difficulties during the negotiations and ongoing work on the project.

The aim of our meeting today is to resolve perhaps the most difficult issue: the problem of choosing a site for implementation of the project. Once this decision has been taken, we can expect a swift and successful conclusion of the negotiations, and work on the construction of ITER to begin very soon.

We know that two of the remaining candidates for providing the site — the European Union and Japan — have recently made significant progress and their views have converged. Specifically, they have agreed on the role of the “host country” and “non-host country” and prepared a Joint Paper which was distributed to the other participants.

I hope that the work that has been done will allow us to reach a consensus at this meeting on the choice of a site and I propose that the heads of the delegations inform us of the positions of their Parties.

First of all, I would like to say express heartfelt thanks to Minister Rumyantsev for hosting this important meeting.

Twenty years have passed since the leaders of the U.S.A. and the Soviet Union reached an agreement to launch the ITER project in 1985. Since then, the Design Activities of ITER have been promoted with great efforts by the Parties participating in ITER, and the Engineering Design necessary for the construction of ITER was finalized in 2001. I am proud that the researchers in our country have made major contributions to this work.
Following the completion of the Engineering Design Activity, three years ago, Negotiations on the ITER site started. Our country and the EU proposed respectively a candidate site, followed by many negotiation meetings in the framework of bilateral and multilateral meetings by 6 Parties, which included the first Ministerial Meeting in Washington in December, 2003.

Since then the site issue has been deadlocked until recently. In order to resolve this situation, last September Japan made a new proposal, that the roles of the Host and non-Host should be identified first between Japan and Europe, while not assuming a specific site.

The point of this proposal was that not only the Host Party but also the non-Host Party should play an important role in the implementation of ITER and in future nuclear fusion research. The other four Parties welcomed the deliberations based on this proposal and they expressed their expectation that this proposal would make it possible to reach consensus on the site issue. The two Parties continued the negotiations, and finally reached a common view, which provides the basis for a decision about the site.

The reasons why we have vigorously pursued hosting ITER are threefold:

Firstly, Japan, which is poor in energy resources, has the strong intention to take the initiative in contributing to the world by developing fusion energy, which would enable a nearly inexhaustible supply of energy and be environmentally benign for the Earth to the benefit of humankind.

Secondly, our country makes major contributions to this field in which it is world class on the basis of its research activities for a long period of time, and has sufficient capability to play the role and fulfil the responsibility of the Host Party.

Thirdly, if such a large project for science and technology were realized in Japan through international cooperation, it would be epoch-making not only for Japan but also for other Asian countries and, therefore, of great significance.

However, based on the situation that three years have passed since the start of the negotiations on the site issue and a consensus on the roles of the Host Party and the non-Host Party has been not reached, it is undesirable that both Japan and the EU adhere to their own sites and the negotiations continue into the future with no prospect of conclusion. We presume that the other Parties share this view.

Therefore, taking into account the following considerations:

— The ITER project should be started as soon as possible for the future of humankind;
— The six Party framework should not be broken in implementing the ITER project;
— The ITER project starting smoothly would have an extremely great effect on international cooperation on science and technology in the twenty first century;
and, taking a broader view of the situation, we decided that we will let the EU host the ITER site. Now we propose this to you all officially on behalf of the Japanese government.

Dr. J. Potocnik, European Commissioner for Science and Research, thanked Minister Nakayama for the highly constructive spirit with which he and his colleagues had conducted the bilateral discussions. He expressed his respect for the honourable manner in which the most sensitive stages were handled. He pointed out that the EU was well aware of the important task it had in front of it as the Host of ITER. The action taken had implications beyond that of establishing fusion energy. It was also an expression of mutual confidence to face the scientific, technical and political challenges that will occur in the course of this first-of-a-kind true international science cooperation among the leading nations of the world. ITER was establishing a model of global co-operation to address the increasingly global nature of the challenges confronting today’s society (see full text below).

Statement of Dr. Janez Potocnik, European Commissioner for Science and Research

Mr. Moderator, distinguished colleagues and friends,

May I first express my thanks to Dr. Rumyantsev, Mr. Borovkov and all our Russian friends for taking the initiative to convene this meeting and for making us feel so welcome in Moscow. Not for the first time in ITER, the Russian Federation has taken a key initiative at just the right time.
I should also like to thank Minister Nakayama for his positive intervention today and, more generally, for the highly constructive spirit with which he and his colleagues have approached our extensive bilateral exchanges over the last few months. I also wish to express my respect for the honourable manner in which the most sensitive stages of this process was handled. Indeed all the Parties represented here have, through their patience and sustained support to the process, contributed to the resolution that we can achieve together today.

On the basis of Minister Nakayama’s statement and in accordance with the Joint Paper agreed by the Chief Negotiators for the European Union and Japan in Geneva on 5 May, I am able to confirm the readiness of the EU to take the role of Host to the ITER project at the proposed site of Cadarache in southern France.

The EU is well aware of the important task it has in front of it as Host of ITER. I can confirm that the EU will be fully ready to assume its responsibilities under the Joint Paper and under the Agreement.

This means that the EU is committed to playing its full part in this unprecedented international scientific cooperation, throughout its entire duration. This includes:

— provision of the necessary infrastructure for the site;
— support to the project management and
— making available the agreed resources, through the European Domestic Agency that is being set up in Spain.

I shall therefore be happy to subscribe on behalf of the EU to the proposed draft Joint Declaration which expresses the political consensus that we have now achieved.

The time has now come to look forward. The resolution of the siting of ITER and our common understandings set the scene for bringing to conclusion the international agreement. Embarking together on the construction of the ITER project, we shall be building a true partnership for the rapid realization of the promise of fusion energy to the benefit of all mankind.

But our action today has implications beyond that of establishing fusion energy. It is also an expression of mutual confidence in our capacities to face up to the scientific, technical and political challenges that will occur in the course of this first-of-a-kind true international science cooperation among the leading nations of the world.

With ITER we are establishing a model of global co-operation to address the increasingly global nature of the challenges confronting today’s society.

Before concluding, I should like to add our expression of sincere gratitude to the IAEA - fittingly represented here today by Deputy Director General Burkart - for the support that the Agency had provided to all the ITER activities to date and for the wisdom and patience with which DDG Burkart has moderated the series of high level meetings over the last two years that has brought us to today’s successful resolution.

Mr. Moderator, the EU looks forward to working with its Partners towards the conclusion of the Agreement and the start of ITER construction at the earliest practicable date, so that we can together realize our common goal to realize Fusion energy.

Thank you.
Mr. S. Choi, Vice-Minister of Science and Technology, Republic of Korea, reminded the delegates that the eyes of the world were on ITER as one of the most significant projects of the century, with a view to it being a peaceful and affluent one. Having just crossed the barrier of the site decision, there was still more to be done ahead, particularly by concluding the ITER Joint Implementation Agreement as soon as possible. He quoted a Korean proverb, literally translated as “After rain ground hardens,” which parallels with the one “After a storm comes a calm.” Likewise, the ITER partnership had been strengthened by the hard times that had to be overcome, and he therefore firmly believed that the ITER project could be made a success through consultations among the six Parties (see full text below).

Mr. Alexander Rumyantsev, Head of the Russian Federal Atomic Energy Agency, and distinguished delegates,

I am honored and privileged to attend this Second Ministerial Meeting, representing the Government of the Republic of Korea, and I am sure to believe that this Meeting will serve as landmark of the ITER project.

First and foremost, I would like to commend all the efforts made by the officials of the Russian Government to bring about this meeting.

Although we initiated the ITER project with a clear vision of securing a clean and unlimited energy source, we have met the continued challenges with the site selection since the first Ministerial Meeting in December 2003. But the significant agreement between the European Union and Japan on the roles of the Host and the non-Host enabled us to get together today to move on with further steps.

As I join all participants here in welcoming this agreement, I would like to affirm the commitment of the Korean Government to reaching a consensus among the six Parties during the negotiations, and will make every effort to serve as a Party of the ITER project.

Distinguished delegates,

All the eyes of the world are on ITER as one of the most significant projects in this century, hoping for a peaceful and affluent 21st century.

We just crossed the barrier of site decision, but there is still more left to be done ahead of us. We have to share the common understanding regarding the details of the Joint Paper through forthcoming negotiations and implement the system of ITER by concluding the ITER Joint Implementing Agreement as soon as possible.

Last, there goes a Korean proverb, literally translated as “After rain ground hardens,” which parallels with the one “After a storm comes a calm.” Likewise, our partnership firms enduring hard times, and on the basis of this stronger partnership, I firmly believe that we can make the ITER project a success through consultations among six Parties.

Once again, I would like to remind you that it is time for us to make best efforts to realize the construction of ITER.

Thank you.
Dr. Raymond L. Orbach, Director, Office of Science, U.S. Department of Energy, representing the US Government, noted that the six Parties to the ITER Negotiations had reached an important milestone en route to the objective of fundamental international import: harnessing the energy that powers the sun and stars here on earth in order to promote enhanced global energy security (see excerpts from statement below).

Based on the positions of the Parties, the unanimous decision was taken to accept Cadarache, France, as ITER construction site. On the occasion of the Ministerial Meeting, the Joint Declaration by the Representatives of the Parties accompanied with the Joint Paper on the roles of the Host and the Non-Host for the ITER Project has been signed (see next page).
Joint Declaration by the Representatives of the Parties to the ITER Negotiations, on the Occasion of the Ministerial Meeting for ITER, Moscow, 28th June 2005

The Representatives of the European Atomic Energy Community (EURATOM), the Government of the People's Republic of China, the Government of Japan, the Government of the Republic of Korea, the Government of the Russian Federation and the Government of the United States of America,

Recalling the successful completion of the ITER Engineering Design Activities (ITER-EDA) under the auspices of the International Atomic Energy Agency (IAEA);

Recognizing that the ITER-EDA has produced a detailed, complete and fully integrated engineering design of ITER, an international project aimed at demonstrating the scientific and technological feasibility of fusion energy;

Emphasizing the importance of exploring the long-term potential of fusion energy as a virtually limitless, environmentally acceptable and economically competitive source of energy;

Advocating wide international co-operation in developing this source of energy for all mankind;

Noting the attached Joint Paper that sets out the common views reached by the Heads of Delegations of the European Union and Japan to ITER Negotiations on the respective roles of EURATOM and Japan in the joint implementation of ITER within the six-party Framework;

Convinced, on the basis of progress in research and other developments in the field of fusion energy, of the importance of ITER as the next step on the path to develop fusion energy and of the urgent need to initiate the implementation of ITER;

Emphasizing the importance of ITER for the rapid realization of fusion energy for peaceful purposes and the stimulation of the interest of succeeding generations in fusion;

Emphasizing also the importance of joint implementation and partnership in implementing this long-term and large-scale research project, and of an equitable sharing of the resultant benefits among the Parties to the prospective international agreement on the joint implementation of ITER (hereinafter "the Agreement");

Mindful of the critical importance of safe and reliable implementation of the construction, operation and decommissioning phases of ITER, including for the purpose of demonstrating safety and advancing the social acceptability of fusion as an energy source; and

Sharing the common understandings that:

- ITER should be implemented by an international organization (the ITER Organization) to be established and supported by the Parties, to the Agreement (hereinafter "the Parties") with the possibility of accession by any state or international organization subject to unanimous agreement of the Parties;
- ITER shall be sited at Cadarache, France, and so the Host and the non-Host in the attached Joint Paper will be respectively EURATOM and Japan;
- the sharing of costs and the allocations among the Parties of procurements of the components of ITER should follow the consensus on these matters that has been reached in the frame of ITER negotiations to date;
- the Broader Approach activities that will be implemented through bilateral cooperation between EURATOM and the Government of Japan will be open to other Parties for their participation in Broader Approach research activities;

On the above basis:

confirm that the negotiations on the Agreement and related documents reflecting the above-mentioned common understandings should be completed with the greatest urgency for submission thereafter to their respective authorities for signature and ratification, acceptance or approval as necessary, with a view to enabling the entry into force of such Agreement and the start of construction as soon as practicable;

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* The estimated costs of ITER construction are set out in the Final Report of the ITER EDA (ITER Documentation Series No 31; IAEA, Vienna 2001).
* The ITER Host Party will contribute 50% of the construction costs of ITER. Each other Party will contribute 15%.
reaffirm the importance of the continuation, pending the entry into force of the Agreement, of the successful co-operation to date within the framework of the ITER Transitional Arrangements under the auspices of the IAEA and as provided for in the Terms of Reference of these Transitional Arrangements, including the early identification and designation of the nominee Director-General for the prospective ITER Organization and the establishment at an appropriate time of a common fund to support common expenses incurred in preparing for an efficient start of joint implementation of ITER; and

express their gratitude to the IAEA for its important and constructive role in support of ITER co-operation since its inception and their wish to continue a fruitful relationship with the IAEA in the future phases of ITER co-operation.

Signed on 28th June, 2005, at Moscow:

[Signatures]

for the European Atomic Energy Community

for the Government of the People’s Republic of China

for the Government of Japan

for the Government of the Republic of Korea

for the Government of the Russian Federation

for the Government of the United States of America

Joint Paper

The roles of the Host and the non-Host for the ITER Project

Japan has presented a written proposal on the roles of the Host and the non-Host for the ITER Project on 9th September 2004.

The European Union has presented its vision of a privileged partnership among those two parties on 20th November 2004.

Japan and the European Union have reached common views on the following roles of the Host and the non-Host in the implementation of ITER within the Six Party framework:

A: ITER construction

- Funding

The Host will contribute 50% of the estimated cost of ITER construction, while the non-Host will contribute 10% of the estimated cost of ITER construction, equal to the contribution pledged by other ITER negotiation Parties. In addition to its share of the construction cost, the Host will bear the costs of site preparation.

- Transfer of Procurement responsibilities

From the non-Host and its industries, the Host will make additional procurement of components equivalent to 10% of the total procurements for ITER construction out of its contribution of 50%. As a result, the non-Host will be able to provide the components corresponding to 20% of the total procurements for ITER construction with 10% contribution.

The choice of components procured through this method will be decided jointly, based upon the wishes of the non-Host as long as this serves the goal of promoting the project smoothly. The methods of transfer of procurement allocation, which should ensure the above transfer based on the cost estimates in the ITER Final Design Report, will be elaborated between the Host and the non-Host. These methods should ensure the efficient implementation of the project and comply with the Parties’ applicable regulations for the use of public money.

Footnote:

This corresponds to $12.54 ITER units of account.
C - DEMO Reactor

300001

Nuclear Fusion Reactor

500000

International Demonstration Reactor (IDR)

600000

Fusion Power Plant

700000

The DEMO Reactor will be chosen by the non-host from the above-referred concepts. The DEMO Reactor project will not include the above list. It could be chosen at the initiative of the non-host. The DEMO Reactor project will provide that they contribute to a more realistic evaluation of fusion energy, and the non-host will support implementation, the non-host will support the implementation of the DEMO Reactor project.

700001

C - DEMO Reactor

800001

Fusion Power Plant

900001

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900001

Fusion Power Plant

100001

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100001

Fusion Power Plant

110001

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On behalf of the IAEA, Deputy Director General Prof. W. Burkart addressed the audience (see text below).

**Statement by Prof. Werner BURKART, Deputy Director General, Head, Department of Nuclear Sciences and Applications**

Excellencies, Ladies and Gentlemen,

On behalf of the Director General of the International Atomic Energy Agency, and on my own behalf, this is a proud moment for me to be able to address the second Ministerial Meeting of ITER, and to acknowledge the achievements of the six ITER partners, the European Union, the People's Republic of China, Japan, the Republic of Korea, the Russian Federation and the USA. Their collective decision opens an exciting new chapter in nuclear sciences and applications.

In signing the joint declaration the representatives of the parties to the ITER negotiations acknowledge the significance of fusion science and technology and advance its development for energy production. The IAEA is pleased, in the last 15 years, to have assisted in providing support for the ITER process as it was in transit towards this important stage of implementation, and also to have supported recent complex negotiations. The IAEA offers its continuing support for the forthcoming transition period. Our mandate is to advance both nuclear science and energy development that furthers human peace and prosperity and we shall be constructively helpful in expanding the circle of talent that contributes to, and benefits from ITER's progress. We stand ready to assist the many other IAEA Member States who may wish to become part of this endeavour.

Fusion has the potential for socio-economic progress as great as the technological achievement of humans mastering flight. The fusion milestone reached today has had auspicious antecedents en route. The step we are taking in Moscow occurs on the centenary of the magic year of physics, 100 years after Einstein's publications in 1905 opened the door to harnessing the energy of the atom.

It is a further nuclear coincidence that this event is taking place in Moscow. Our hosts, the Russian Federation, can be proud of other significant achievements in nuclear history: 51 years ago at Obninsk, Russia built the world's first power producing fission reactor; the first Tokamak experimental design, which can be seen as the precursor of ITER, was built in this country.

Much work lies ahead, and it will challenge our scientists and engineers as did the dawn of the nuclear fission age. The Agency is confident that those challenges will be met with success, and sends its best wishes to the ITER community worldwide in their efforts towards harnessing fusion for sustainable development.

In conclusion, Mr. Rumyantsev said that there was every reason to call this a historic day for the entire fusion community since reaching consensus on the ITER site opens a way for the successful completion of the Negotiations on ITER construction (see full text below).

**Closing address by Mr. A.Yu. Rumyantsev, Director of Rosatom**

Dear colleagues and participants,

Allow me to express my profound satisfaction at the progress that we have made at our meeting. We have every reason to call this a historic day for the entire fusion community. We have reached a consensus on a very difficult issue and now we have all we need for the successful completion of the negotiations.

I hope that the drafting of the agreement will be completed by the end of this year.

I think that the preparatory committee (the ITER Council) is in a position to set about immediately developing specific measures that will allow implementation of the ITER project to begin in an organized manner and without delay.

I would also like to express my profound gratitude to all the participants in this project who have made an enormous contribution to its development. Here I mean both the Participant Teams, which have carried out the majority of the R&D, and the International Team, which has successfully coordinated all work on the project. Special thanks go to the leader of the International Team, Dr. Shimomura, who is here at our meeting.
I would like to thank all participants at the meeting and wish you further success in the implementation of the project.

The official part of our meeting is now complete.

I invite all participants to a press conference and, after the press conference, to a celebration dinner.

Thank you.