1. Introduction

The Sixth Annual Meeting of the IWGFR was held at the IAEA Headquarters in Vienna from 9 to 11 May 1973. The Meeting was attended by the Member States of the Group: France, Federal Republic of Germany, Italy, Japan, United Kingdom, Union of Soviet Socialist Republics and the United States of America, and representatives from NEA, CEC and IAEA.

The Meeting was opened by Mr. Polliart, Director of the Division of Nuclear Power and Reactors. Dr. Chernilin, Deputy Director General of the IAEA attended the opening of the Meeting.

The List of Participants is attached to the Summary Report (Appendix 1).

The Meeting was presided over by Dr. Tomabechi.

The Agenda of the Meeting is given in Appendix 2 and the items were discussed in turn; recommendations were made to the IAEA where appropriate.

2. Approval of the Minutes of the Fifth Meeting

The Chairman suggested the approval of the Minutes of the Fifth Annual IWGFR Meeting. It was so agreed.

3. Report by the Scientific Secretary

The Scientific Secretary reviewed the activities of the Group for the period from April 1972 to May 1973 (Appendix 3).
DISCLAIMER

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4. **Publication of the Summary Report of the IWGFR Annual Meetings**

It was recommended to divide the Summary Reports of the Annual Group into three parts: Part I: Minutes of the Meeting. Part II: National Programmes in the Field of Fast Reactors. Part III: Discussions on the National Programmes. It was also recommended:

To put all these parts into reproduction separately in order to be able to distribute Parts I and II first and then Part III.

5. **Distribution of Summary Reports**

The US member of the Group, Dr. G. Wensch, has asked to have five copies of each summary report sent directly to him by air mail plus 20 copies transmitted to him via the US Mission.

M. Tanabechi, the Japanese member of the Group, has made the same request.

6. **Comments on the Summary Report of the Specialists' Meeting on Sodium Combustion and Extinguishment**

It was agreed to send the comments made by the experts from the Federal Republic of Germany on the Summary Report of the above-mentioned meeting to all the participants of the Meeting as an addition to the Summary Report.

7. **Modes of Fuel Failure**

Following discussions at the Conference on Engineering of Fast Reactors for Safe and Reliable Operation, Dr. Engelmann suggested and approved to evaluate requirements and compare them to the capabilities of existing or authorized experimental facilities in order to assess whether additional facilities could augment the existing and projected safety programme. The IWGFR agreed to pursue this question by correspondence in order to clarify the subject and character of such requirements before the next meeting of the Working Group. Dr. Engelmann will evaluate a proposal for the mandate of the correspondents and send it at the end of May to the IWGFR members for comments and approval. The correspondents, nominated at the meeting, are as follows: Dr. Jakeman (UKAEA), Dr. Cicognani (CNEEN) and Dr. Kessler (GFK). The Working Group will discuss the results of the correspondents at its next meeting.

8. **Cost Estimates of the Prototype Fast Reactors**

As a majority of the Working Group expressed substantial interest in obtaining more information on the real and projected capital cost estimates of the prototypes,
authorized for construction or nearing completion, a comparison of the elements used in defining the costs would be of strong interest to the membership. Plants to be considered would include the PFR, SNR-300, Phenix, BN-350, MONJU and Demonstration Plant. Dr. Wensch agreed to furnish to the Scientific Secretary a suitable form which should help in presenting the cost elements in a comparable manner.

9. Comments on National Programmes

These will be issued as Part II of the Summary Report, and Discussions on national programmes will be issued as Part III.

10. IAEA Nuclear Data Programme

It was agreed to include the summary by Dr. Schmidt, Head of Nuclear Data Section, presentation into the Minutes of the 6th Annual IWGFR Meeting (Appendix 4).

11. International Coordination of the Schedule for the Major Fast Reactor Meetings and Other Major International Meetings Having a Predominant Fast Reactor Interest

(a) The cooperation which exists between the members of the IWGFR and the representatives of the NEA and CEC at the IWGFR in coordination of the schedule and topics for the meeting having a predominant fast reactor interest should be extended to the major scientific and technical societies in various countries.

The IWGFR Scientific Secretary must keep in contact with the scientific secretaries of these societies. He should inform the societies of the existence of the IAEA International Working Group on Fast Reactors, describing its field of activities and the major aims of the Working Group, proposing the cooperation and co-sponsorship for the conferences and symposia planned by the Working Group and those by the societies which correlate with the LMFBR's research and development and explaining the benefit of such cooperation.

The IWGFR members will send the addresses of the corresponding scientific and technical societies to the IWGFR Scientific Secretary.
The IWGFR members have agreed to discuss, at the next Annual Working Group Meeting or by correspondence between Annual Meetings, the information on the meetings received from different organizations. In the last case, the Scientific Secretary must decide in accordance with the majority opinion whether the IWGFR will support the meeting or not, and inform the Group members on the decision. If a meeting is not supported by the IWGFR, the Working Group members will not encourage any persons to attend the meeting. Also, the Working Group members will not prevent anyone from participating at the meeting if they wish to do so.

(b) It was agreed not to consider the 2nd International Conference on Structural Mechanics in Reactor Technology (West Berlin, 10-14 September 1973) as a meeting to be supported by the IWGFR.

Similar decisions have been made concerning the International Meeting on Reactor Heat Transfer (Karlsruhe, FRG, 9-11 October 1973) and the ANS Conference on Fast Breeder Reactor Safety (Los Angeles, California, USA, 2-4 April 1974).

12. IAEA Symposium on Fuel and Fuel Elements for Fast Reactors

This symposium will be held in Brussels, Belgium from 2 to 6 July 1973 (see details in Appendix 5).

13. International Symposium on Physics of Fast Reactors will be sponsored by the Japanese scientific, technical and industrial organizations with the scientific cooperation of the IAEA International Working Group on Fast Reactors. It will be held in Tokyo, Japan from 16 to 19 October 1973.

The International Review Committee Meeting for this Symposium took place at Agency Headquarters on 7 May 1973. It reviewed the abstracts presented, selected the papers, defined the number and titles of the sessions and recommended the names of the session chairmen.

14. International Conference on Fast Reactor Power Stations sponsored by the BNES will be held in London, UK, from 11 to 14 March 1974. The IWGFR supports the Conference. The Working Group members attended the Organizing Committee Meeting for the Conference which was held at Agency Headquarters on 8 May 1973. The Meeting defined the object of the Conference, the scope of the topics, titles of sessions, etc.
15. **European Nuclear Conference**

Mr. Vautrey gave preliminary information on the European Nuclear Conference which is planned to be held in Paris, France from 14 to 21 April 1975.

It was agreed to define the IWGFR relation to the Conference at the next Annual Working Group Meeting after receiving more information about the Conference or by correspondence before the Meeting, if necessary. Mr. Vautrey agreed to keep contact between the IWGFR and the Organizing Committee for the Conference.

16. **Conference on Fast Power Reactors**

Dr. Smith has given some information regarding the intention to organize the Conference on Fast Power Reactors in the UK or in another country some time in 1975 or 1976.

The opinion was raised that the European Nuclear Conference could probably be a suitable place to cover the experience in operation and progress of demonstration fast reactor plants. In this case, the year 1977 would be more appropriate for holding such a conference. The recommendation of the Working Group will depend on the final programme of the European Nuclear Conference.

17. **Symposium on Steam Generators for LMFBRs**

Dr. Krasnojarov has proposed to combine the following topics for the IWGFR Specialists' Meeting: "Sodium-Water Reactions", "Operating Experience with Steam Generators" and "Chemistry and Metallurgy of Steam Generators" (Appendix 7) into the subject for the Symposium on Steam Generators for LMFBRs. This proposal was accepted by the IWGFR members.

It was agreed that the Symposium should be highly specialized with as small attendance as practicable, and that it should be held in a location near a steam generator test facility. The proposed date for the Symposium was late 1974. The possibility of providing simultaneous translation was discussed. Mr. Polliart, Director of the Division of Nuclear Power and Reactors, has promised to consider the Agency's assistance in this matter.
The following methods of holding the Symposium was discussed. There are three main topics in the future programme for the Symposium. One can envisage the number of participants for each of these topics as for a specialists' meeting. Round table discussions should be provided in a series for the experts in each of these topics. At this time, the others will either listen or bring up certain questions.

There is also the possibility of having parallel sessions at the Symposium. No final decision was made on this question.

Representatives of several countries have expressed the wish of their country to host the Symposium.

It was decided that the countries interested will inform the IWGFR Scientific Secretary by the end of June 1973 regarding their readiness to hold the Symposium.

18. Conference on Safety of Fast Reactors

Dr. Smith has informed the Group that the safety branch in the UK feels the need for a further Safety Conference on Fast Reactors. A more detailed consideration of this question will be made at a later date, probably at the next Annual Meeting.

19. IAEA Panel on Computer Codes and Models for the Analysis of Abnormal Reactor Behaviour

It was agreed not to consider this point in accordance with Mr. Polliart's suggestion.

20. Specialists' Meetings

(a) The following topics were added by the Group members to the List of Proposed Topics for the IWGFR Specialists' Meetings (Appendix 6):

= Fuel Element Failure Detection and Location
= Dynamic Response of Core Structure to Transient Loads
= In-core Instrumentation and Handling of the Data
= Principles of Hot-channel Factor Calculation
= Repair and Maintenance of Radioactive Sodium Circuits and Components
= Cavitation in Sodium and Studies of Analogy with Water as Compared to Sodium
= Handling of the Design for and Mitigation of Thermal Transients in LMFBR Plants, Including System Features to Mitigate them as well as the Methods to Properly Define them for use of Designers.

= Properties and Behaviour of Irradiated Fuel Elements with Emphasis of Fission Product Attacks on the Cladding and Possible Means of Resolution

= Chemistry and Metallurgy of Steam Generators

= Emergency Shutdown Cooling

= Fuel Element Failure Propagation

= Deposition Phenomena in Sodium Circuits

(b) The title of point 10 was changed as follows:

= Wear, Friction and Self-Welding of Materials in Sodium

(c) As a result of the discussion on the list of topics for specialists' meetings (Appendix 7), it was recommended that the IAEA organize the following meetings:

i. Principles of Hot-Channel Factor Calculation

It is supposed that the meeting will take place at Karlsruhe, FRG in the Fall of 1973.

ii. Operating Experience and Design Criteria of Sodium Valves

This meeting will be held in the USA in January-February 1974.

iii. Handling of the Design for and Mitigation of Thermal Transients in LMFBR Plants

It is supposed that the meeting will be held in the USA in November 1973 or in June 1974.

iv. Emergency Shutdown Cooling

To be held in Fall 1974. Location not yet decided. In the UK.

The complete list of meetings approved by the IWGFR to be held in the period from May 1973 through 1974 is given in Appendix 8.
21. Other Business

(a) First-aid in Sodium Burns

Satisfaction was expressed on the work done on the review of the documents presented by the country members. It was suggested to reconsider the review in two or three years.

(b) Principles of Good Practice for Safe Operation of Sodium Circuits

The draft of the document has been prepared by the UK specialists and distributed among the IWGFR members for their comments. Afterwards, the further draft will be prepared and circulated and if everyone agrees, it could become the Working Group document.

It was agreed to send the comments to Dr. Smith (UK) before the end of June 1973 and copies (in accordance with the established practice) to other IWGFR members and Scientific Secretary.

(c) Bibliography on Fast Reactors

The Agency will continue its efforts to find the appropriate methods of doing this work and will inform the Working Group of the results at the next IWGFR Annual Meeting.

22. The Place and Date of the 7th Annual Group Meeting

It has been recommended to hold the 7th Annual Meeting of the IWGFR from 6 to 8 March 1974 in the UK (as a first choice) or at IAEA Headquarters in Vienna (as a second choice). The final decision will be made through correspondence between Dr. Smith and the Agency.
# List of Participants at 6th Annual Meeting of the International Working Group on Fast Reactors

Held from 9 - 11 May 1973
at IAEA Headquarters, Vienna

<table>
<thead>
<tr>
<th>Participant</th>
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<tr>
<td><strong>France</strong></td>
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<tr>
<td>L. Vautrey</td>
<td>Commissariat à l'Energie Atomique</td>
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<td></td>
<td>CEN de Saclay</td>
</tr>
<tr>
<td></td>
<td>Boite Postale No. 2</td>
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<td></td>
<td>91, Gif-sur-Yvette</td>
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<tr>
<td><strong>Germany, Fed. Rep.</strong></td>
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<tr>
<td>P. Engelmann</td>
<td>Kernforschungszentrum Karlsruhe</td>
</tr>
<tr>
<td></td>
<td>Projekt Schneller Brüter</td>
</tr>
<tr>
<td></td>
<td>75 Karlsruhe</td>
</tr>
<tr>
<td></td>
<td>Postfach 3640</td>
</tr>
<tr>
<td>U. Döhnert</td>
<td>Bundesministerium für Bildung und Wissenschaft</td>
</tr>
<tr>
<td></td>
<td>D 53 Bonn</td>
</tr>
<tr>
<td></td>
<td>Postfach 120 124</td>
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<tr>
<td><strong>Italy</strong></td>
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<tr>
<td>F. Pierantoni</td>
<td>CNEP Fast Reactor Programme</td>
</tr>
<tr>
<td></td>
<td>Via Arcoveggio 56-23</td>
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<td></td>
<td>Bologna 40129</td>
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<tr>
<td><strong>Japan</strong></td>
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<tr>
<td>K. Tomabechi</td>
<td>Power Reactor and Nuclear Fuel Development Corporation</td>
</tr>
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<td>S. Horiuchi</td>
<td>Power Reactor and Nuclear Fuel Development Corporation</td>
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<td><strong>United Kingdom</strong></td>
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<td>R.D. Smith</td>
<td>United Kingdom Atomic Energy Authority</td>
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<td>Reactor Group Headquarters</td>
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<td>Risley, Warrington</td>
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<td>Lancashire</td>
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</tbody>
</table>
United States
C.W. Wensch
Division of Reactor Development and Technology
United States Atomic Energy Commission
Washington, D.C. 20545

USSR
N.V. Krasnojarov
Scientific Research Institute on Atomic Reactors
Uljanovskaja Region
Dimitrovgrad

REPRESENTATIVES

CEC
H.J. Allgeier
Directorate General
Industrial, Technological and Scientific Affairs
200, rue de la Loi
Brussels 1040
Belgium

NEA
W. Häussermann
Technical Division
38 boulevard Suchet
Paris 16ème
France

IAEA
A.J. Polliart
Director
Division of Nuclear Power and Reactors
B.N. Kolbasov
Division of Nuclear Power and Reactors
J. Schmidt
Head of Nuclear Data Section
Division of Research and Laboratories
J.C. McCullen
Head of Nuclear Safety Section
Division of Nuclear Safety and Environmental Protection
E.I. Inyutin
Scientific Secretary
International Working Group on Fast Reactors
Division of Nuclear Power and Reactors
AGENDA

1. Review of IWGFR Activities
   1a. Approval of the minutes of the Fifth IWGFR Meeting (Chairman).
   1b. Report by Scientific Secretary regarding the activities of
       the Group (Dr. Inyutin).

2. Comments on National Programmes on Fast Breeder Reactors (IWGFR members).

3. International Coordination of the Schedule for Major Fast Reactor
   Meetings and other major international meetings having a predominant
   fast reactor interest (Chairman).

4. Consideration of Conferences on Fast Reactors.
   4a. IAEA Symposium on Fuel and Fuel Elements for Fast Reactors,
       Brussels, Belgium 2 to 6 July 1973, (Dr. Inyutin).
   4b. International Symposium on Physics of Fast Reactors, Tokyo,
       Japan, 16 to 23 October 1973, (Mr. Tomabechi).
   4c. International Conference on Fast Reactor Power Stations,
       London, UK, 11 to 14 March 1974 (Dr. Smith).
   4d. Suggestions of the IWGFR members on other conferences.

5. Consideration of a Schedule for Specialists' Meetings in 1973-74 (Dr. Inyutin).

6. Other Business.
   6a. First-aid in Sodium Burns (Dr. Inyutin).
   6b. Principles of Good Practice for Safe Operation of Sodium
       Circuits (Dr. Smith).
   6c. Bibliography on Fast Reactors (Dr. Inyutin).

7. The Date and Place of the Seventh Annual Meeting of the IWGFR.
Appendix 3

Review of the IWGFR Activities for the Period Since
the Fifth Annual Meeting of the Group

The activities of the Agency within the framework of the International Working
Group on Fast Reactors has been carried out in accordance with the recommendations
of the 5th Annual Meeting of the IWGFR.

I. Specialists' Meetings

During the last year, four specialists' meetings (SM) were held and one is
under preparation.

The Specialists Meeting on Handling and Transportation of Spent Fuel Elements
for LMFBR's was held just after the Fifth Annual IWGFR Meeting in Rome, Italy from
26 to 28 April 1972.

The Specialists' Meeting on Sodium Combustion and its Extinguishment-Techniques
and Technology was held in Richland, USA, from 22 to 25 May 1972.

I would like to bring to the attention of the IWGFR members, some of the
recommendations of the Meeting:

a) A single international guideline on sodium combustion product permissible
release levels be considered as a guide for the many national guidelines that exist or
are being formulated.

b) There should be more international cooperation in sodium fire test programmes
and a freer exchange of information afterward to cut down duplication of these
efforts.

c) The preparation of the universal code of fire alarm procedures by the Risley
IWGFR Meeting "Operational Safety of Sodium Circuits" be initiated.

d) IWGFR member countries be asked to provide data on all sodium leaks to date,
giving details such as type of installation, temperature, pressure, material type and
thickness, number of hours to and since failure, size of sodium spill, method of
dealing with leak/fire so that reliability data and details can be divulged to countries
prepared to discuss their failures.

e) Three years' period was recommended for holding the IWGFR meetings on sodium
fires.

The specialists from the Federal Republic of Germany did not participate at this
Meeting and Dr. Engelmann has sent to me comments by German experts to the Summary
Report of the Meeting. The English translation was provided by the Agency and the
comments were distributed among the participants of the Working Group Meeting.

I would appreciate knowing the Group members' opinions as to whether there are
any objections to distributing this document among the participants of the Specialists'
Meeting as an Appendix to the Summary Report of the Meeting.
A list of sodium leaks received from Interatom through Dr. Engelmann is also distributed for the attention of the Working Group members and, through you, for the attention of the specialists in respective countries.

The Specialists’ Meeting on Sodium Impurity Measurements and Control took place in Cadarache, France, from 14 to 17 November 1972.

The Meeting made the following recommendations to the I.A.E.A.:

1. It is a wish of the participants that the Agency consider the inclusion of sodium in its standards program.

2. It is wished that the I.A.E.A. bring together, before the next meeting, reactor designers, chemists, materials’ specialists to facilitate the definition of needs for sampling and analysis.

3. It seems suitable to hold another meeting on the same subject in about three years.

The Specialists’ Meeting on Decontamination of Plant Components from Sodium and Radioactivity was held in Dounreay, UK, from 9 to 12 April 1973.

The Specialists’ Meeting on Development and Application of Absorber Materials in Fast Reactors is under preparation now and will be held in Dimitrovgrad, USSR, from 4 to 8 June 1973.

II. Conferences

The Conference on Engineering of Fast Reactors for Safe and Reliable Operation was held in Karlsruhe, Federal Republic of Germany, last October. Scientific cooperation of the IWGFR was provided for this Conference.

In accordance with the recommendations of the International Selection Committee, the Scientific Secretary of the IWGFR has presented, at the Conference, a review of the discussions at the Specialists’ Meeting on Sodium Combustion and its Extinguishment. Dr. Smidt (Karlsruhe, FRG) and the Working Group’s Scientific Secretary have written an article on the Conference for the Agency journal, “Atomic Energy Review”.

The IAEA Symposium on Fuel and Fuel Elements for Fast Reactors is under preparation now; it will be held in Brussels, Belgium from 2 to 6 July 1973. The Programme Committee Meeting for the Symposium was held at Agency Headquarters on 19-20 March 1973. The Committee has selected the papers to be included in the programme on the basis of the abstracts received, defined the session titles and made recommendations for session chairmen and for the order of presentation during the sessions.

The International Symposium on Physics of Fast Reactors. The Review Committee Meeting for this Symposium took place at Agency Headquarters in Vienna on Monday, 7 May 1973. You know the results of the Meeting.
The International Conference on Fast Reactor Power Stations. The Meeting of the Organizing Committee for the Conference has been held with the participation of the IWGFR members yesterday (8 May 1973).

III. Publications

With regard to the Summary Reports of the Specialists' Meetings, the following were reproduced and distributed by the Agency among the IWGFR members and the participants of the corresponding meetings:


The Summary Reports of the Specialists' Meetings on Sodium Impurity Measurements and Control and on Decontamination of Plant Components from Sodium and Radioactivity are under preparation now.

The Summary Report of the 5th Annual IWGFR Group Meeting was divided into two parts: Part I, the minutes of the Meeting was distributed in May 1972; Part II, reviews of national programmes and discussions, distributed in December 1972.

4. First-Aid in Sodium Burns

The Agency collected all the material presented by the IWGFR members on this subject. Dr. H.T. Daw from the Agency's Division of Nuclear Safety and Environmental Protection has reviewed these documents in accordance with the recommendations made by the 5th Annual Group Meetings. This review was distributed among the IWGFR members in March 1973. The documents presented by the country-members were distributed shortly after their receipt.

5. Principles of Good Practice for Safe Operation of Sodium Circuits

The UK specialists have prepared a draft of such a document. The document was distributed among the IWGFR members per letter on 24 April 1973.

6. Bibliography on Fast Reactors

The Agency made efforts to find appropriate organizations or persons to do this work in accordance with the structure of the earlier Agency edition — Bibliographical Series No. 22. It is unexpectedly difficult to find volunteers to do this work. However, the Agency intends to continue its efforts to find the appropriate organization or persons.
7. Relations with the NEA

The 16th Annual Meeting of the EACRP. The IWGFR Scientific Secretary attended this Meeting and gave a short review of the IWGFR activities and Agency's meetings in the field of reactor physics. It was of great interest to the IWGFR activities and particularly to the proposed physical topics for the IWGFR specialists' meetings. An exchange of letters took place between Mr. Royen from the EACRP Secretariat and the IWGFR Scientific Secretary. The letters are attached to this review.

Cooperation on reactor development, in particular, gas-cooled fast reactors. The Meeting which was attended by Dr. Häussermann from NEA and some of the IAEA representatives took place at Agency Headquarters on 23 March 1973 to discuss this question.

The situation of the IAEA International Working Group on Fast Reactors and NEA Working Group regarding exchange of information on gas-cooled fast reactors was reviewed. It was concluded that it seemed appropriate that information exchange in the future be focused on the Agency's Working Group (or on the Agency's Division of Nuclear Power and Reactors) which would hold meetings on gas-cooled fast reactor topics as and when appropriate.
8th February 1973

Dear Dr. Inyutin,

At the last meeting of the EACRP (Zurich, July 1972), you reported briefly on the activities of the IWGFR. Although most of these relate to engineering problems, the fact that the Working Group had been transferred from the Engineering Section to the Reactor Physics Section of the IAEA Division of Nuclear Power and Reactors aroused interest and was recognized as a potential encouragement to fruitful exchange of information between the EACRP and the IWGFR.

You hinted at the meeting that reports on the meetings of the IWGFR could be made available to the members of the EACRP. Now that the Minutes of the Fifth Annual Meeting of the IWGFR have been distributed, I am wondering if they could be transmitted also to the EACRP, at least the part devoted to reactor physics. Do you think such a distribution could be organized, maybe through the members of the IWGFR?

Hoping to see you in the not too distant future.

With my best wishes,

Yours sincerely,

Jacques Royen
EACRP Secretariat

Dr. E.I. Inyutin
Scientific Secretary
International Working Group on Fast Reactors
International Atomic Energy Agency
11 Kiehntner Ring
A-1011 Vienna.
Dear Mr. Royen,

Thank you for your letter of 8 February 1973 and for the interest shown by the EACRP in the IWGFR activities.

Concerning the distribution of the Minutes of the IWGFR Annual Meetings and Summary Reports of the IWGFR Specialist's Meetings, it was decided at the 5th Annual Meeting of the IWGFR:

"(b) The Summary Reports of Annual Group meetings should be restricted to member organizations of the IWGFR;

(c) the Summary Reports of Specialist's meetings should be distributed among the same organizations described in (b) above.

The members of the IWGFR can distribute such reports among various interested organizations of their respective countries, and the representatives of the international organizations can distribute these reports among the Member States of their respective international organizations."

I imagine that all the EACRP members are from countries which are either IWGFR, NEA or CEC members. Therefore, they will not have any difficulties in receiving the Minutes or Summary Reports.

I am sending for your information and for the information of the EACRP members, a list of the IWGFR members and representatives of the international organizations.

If there are any additional proposals on the subject of the exchange of information, please let Mr. Häussermann, as the NEA representative, discuss them at the 6th Annual IWGFR Meeting which will be held from 9 to 11 May 1973 in Vienna.

Hoping to see you in the near future, I remain

Yours very truly,

E.T. Inyutin
Scientific Secretary
International Working Group on Fast Reactors

Mr. J. Royen
OECD
38, boulevard Suchet
75016 Paris
FRANCE
Mr. Schmidt, IAEA, gave a short progress report on past and future activities of the Agency’s Nuclear Data Section (NDS).

Three evaluations of important fast reactor data \((a-^{239}\text{Pu}; \sigma_{f}^{239}\text{Pu}\) and heavy isotope \(\nu\) data) were finished in 1972 and are published in AER Vol.10, issue No.4, December 1972.

A Panel on Neutron Standard Reference Data was held in November 1972 in Vienna. It showed progress in the confidence level of \(^{6}\text{Li}(n,\alpha)\), \(^{235}\text{U}(n,f)\) and \(\nu_{252}\text{Cf}\) data. The Proceedings will be published this summer. A consultants group is working on the second update of the 2200 m/sec fissile constants.

A Symposium on Applications of Nuclear Data in Science and Technology was held by IAEA in Paris, 12-16 March 1973. This event convened a wide variety of nuclear data users and compilers and demonstrated particularly a severe backlog in nuclear structure and decay data. As a consequence the IAEA will convene in 1974 a Study Group on Non-neutron Nuclear Data in order to investigate measures for improving the international coordination in this data field.

NDS has just published WRENDA 73, the 1973 edition of the world request list for neutron data measurements for nuclear reactors (INDC(SEC)-32/U, March 1973), and a request list for safeguards nuclear data (INDC(NDS)-50/U+S, March 1973) and is going to publish a similar request list for CTR purposes in about summer this year. It is intended, in cooperation with INDC, to extend the detailed assessment of nuclear data requirements in future also to other fields of application.

A Consultants Meeting on cross sections for in-pile neutron dosimetry will be held by the Agency in Vienna, 10-12 September 1973. A review of the status of the more important reactions has been published in the report INDC(NDS)-47/L of October 1972.

A Panel on Fission Product Nuclear Data will be convened by the Agency in Bologna, 26-30 November 1973. It will survey the use, status and testing of this data in 16 internationally coordinated review papers.

11 May 1973
29 March 1973

Mr. R. Rajar
External Relations

THROUGH:
Mr. A. Spano
Head
Research Reactors and Reactor Physics Section

E.I. Inyutin
Division of Nuclear Power and Reactors

Programme Committee Meeting for Symposium on Fuel and Fuel Elements for Fast Reactors

I would like to inform you that the Programme Committee Meeting for the IAEA Symposium on Fuel and Fuel Elements for Fast Reactors was held at Agency Headquarters on 19 and 20 March 1973.

The Programme Committee selected the papers to be included in the programme of the Symposium on the basis of the abstracts received, defined the session titles, distributed the papers into sessions; recommended the order of presentation of papers in the frame of each session, and made recommendations for session chairmen.

The members of the Programme Committee were:

Dr. R.A. Donaldson, UKAEA, Risley, Warrington, Lancs., UK
Dr. K. Hammars, Karlsruhe Nuclear Centre, FRG
Mr. A.J. Spring, Head, Research Reactors & Reactor Physics Section, IAEA

and

Mr. E.I. Inyutin, IAEA, Scientific Secretary of the INGFN.

The results of the work of the Programme Committee Meeting are summarised in the attached Provisional Programme for the IAEA Symposium on Fuel and Fuel Elements for Fast Reactors and in the list of proposed session chairmen.

cc: Messrs. Skjoldbrand Spano Inyutin Miss Keiler Registry files
List of Proposed Topics for the IWGFR Specialists' Meetings

1. In-Core Transient Experiments.
2. On Design Basis Accidents.
3. Design Measures for Protection Against Earthquakes, Floods and Other Natural Disasters.
4. Control and Dynamics of Fast Reactors.
5. Sodium-Water Reactions.
7. Hydrodynamically-Induced Vibrations in Sodium.
8. Operating Experience and Design Criteria of Sodium Valves.
9. Operating Experience with Steam Generators.
Appendix 7

List of Proposed Topics for the IWGFR Specialists' Meetings

1. In-Core Transient Experiments
2. On Design Basis Accidents
3. Design Measures for Protection Against Earthquakes, Floods and Other Natural Disasters
4. Control and Dynamics of Fast Reactors
5. Sodium-Water Reactions
6. Flow Distributions and Heat Transfer in Sodium
7. Hydrodynamically-Induced Vibrations in Sodium
8. Operating Experience and Design Criteria of Sodium Valves
9. Operating Experience with Steam Generators
10. Wear, Friction and Self-Welding of Materials in Sodium
11. Fuel Element Failure Detection and Location
12. Dynamic Response of Core Structure to Transient Loads
13. In-Core Instrumentation and Handling of the Data
14. Principles of Hot-Channel Factor Calculation
15. Repair and Maintenance of Radioactive Sodium Circuits and Components
16. Cavitation in Sodium and Studies of Analogy with Water as Compared to Sodium
17. Handling of the Design for and Mitigation of Thermal Transients in LMFBR Plants
19. Chemistry and Metallurgy of Steam Generators
20. Emergency Shutdown Cooling
21. Fuel Element Failure Propagation
22. Deposition Phenomena in Sodium Circuits
LIST OF MEETINGS APPROVED BY THE IWGFR TO BE HELD IN THE PERIOD
AFTER THE 6TH ANNUAL GROUP MEETING
(from May 1973 through 1974)

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<th>January</th>
<th>February</th>
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1. SM on Development and Application of Absorber Materials for Fast Reactors (Dimitrovgrad, USSR, 4-8 June 1973)
2. IAEA Symposium on Fuel and Fuel Elements for Fast Reactors (Brussels, Belgium, 2-6 July 1973)
3. Symposium on Physics of Fast Reactors (Tokyo, Japan, 16-19 October 1973)
4. SM on Principles of Hot-Channel Factor Calculation (Karlsruhe, FRG, Autumn 1973)
5. SM on Handling of the Design for and Mitigation of Thermal Transients in LMFBR Plants (USA, November 1973 or June 1974)
6. SM on Operating Experience and Design Criteria of Sodium Valves (USA, January-February 1974)
7. 7th Annual Meeting of the IWGFR (UK or Vienna, 6-8 March 1974)
9. SM on Emergency Shutdown Cooling (Location not yet decided, Autumn 1974)
10. Symposium on Steam Generators for LMFBR Plants (Location not yet decided, Autumn 1974)
List of Meetings Sponsored by the
International Working Group on Fast Reactors

1. Consultant's Meeting on Fast Reactor Problem (March 1967, Vienna)
2. The First Meeting of the IWGFR (March 1968, Vienna)
3. Specialists' Meeting on Sodium-Water Reactions (November 1968, ANL, USA)
4. The Second Annual Meeting of the IWGFR (March 1969, Vienna)
7. Specialists' Meeting on Plutonium Alpha (June-July 1969, Winfrith, UK)
9. The Third Annual Meeting of the IWGFR (March 1970, Cadarache, France)
10. Specialists' Meeting on Sodium Vapour Control (March 1970, Cadarache, France)
11. Symposium on Sodium-Cooled Fast Reactor Engineering (March 1970, Monaco)
12. Specialists' Meeting on Failure Cladding Detection (October 1970, Cadarache, France)
13. Specialists' Meeting on Fast Reactor Spectrum Measurements and Their Interpretation (November 1970, ANL, USA)
14. Specialists' Meeting on Operational Safety of Sodium Circuits (March 1971, Risley, UK)
15. The 4th Annual Meeting of the IWGFR (May 1971, Vienna)
16. Specialists' Meeting on Sodium-Water Reactions (May 1971, Melekess, USSR)
19. The 5th Annual Meeting of the IWGFR (19-21 April 1972, Vienna)
20. Specialists' Meeting on Handling and Transportation of LMFBR Spent Fuel Elements (April 1972, Rome, Italy)
21. Specialists' Meeting on Sodium Fires (Sodium Combustion and its Extinguishment - Techniques and Technology), (May 1972, Richland, USA)

23. Specialists' Meeting on Sodium Impurity Measurements and Control (14-17 November 1972, Cadarache, France).

24. Specialists' Meeting on Decontamination of Plant Components from Sodium and Radioactivity (9-12 April, Dounreay, UK).


INTERNATIONAL WORKING GROUP ON PAST REACTORS

List of Members

MEMBERS

France
Mr. L. Vautrey
Commissariat à l'Energie Atomique
CEN de Saclay
Boite Postale No. 2
Gif-sur-Yvette 91

Fed. Rep. of Germany
Dr. P. Engelmann
Kernforschungszentrum Karlsruhe
Projekt Schneller Brüter
75 Karlsruhe
Postfach 3640

Italy
Prof. F. Pierantoni
CNEEN Fast Reactor Programme
Via Arcoveggio 56 - 23
Bologna 40129

Japan
Dr. K. Tomabechi
Dept. of the Development of Fast Reactors
Power Reactor and Nuclear Fuel Development Corp.
9-13, 1-chome, Akasaka, Minato-ku
Tokyo

USSR
Prof. O.D. Kazachkovsky
Scientific Research Institute on Atomic Reactors
Uljanovskaja Region
Dimitrovgrad

Dr. N.V. Kraesnojarov
Scientific Research Institute on Atomic Reactors
Uljanovskaja Region
Dimitrovgrad (through Mission 1 + 3 cc)

UK
Dr. R.D. Smith
United Kingdom Atomic Energy Authority
Reactor Group Headquarters
Risley, Warrington, Lancashire

Alternates

France
Mr. Le Vautrey
Commissariat à l'Energie Atomique
CEN de Saclay
Boite Postale No. 2
Gif-sur-Yvette 91

Fed. Rep. of Germany
Dr. U. Dünert
Bundesministerium für Bildung u. Wissenschaft
D 53 Bonn
Postfach 120 124

Italy
Prof. P. Pierantoni
CNEN Fast Reactor Programme
Via Arcoveggio 56 - 23
Bologna 40129

Japan
Mr. S. Horiuchi
Project Management Division
Power Reactor and Nuclear Fuel Development Corp.
9-13, 1-chome, Akasaka, Minato-ku
Tokyo

USSR
Dr. N. V. Krasnojarov
Scientific Research Institute on Atomic Reactors
Uljanovskaja Region
Dimitrovgrad

UK
Dr. R. D. Smith
United Kingdom Atomic Energy Authority
Reactor Group Headquarters
Risley, Warrington, Lancashire

cc: French Embassy
Technikerstr. 2
Vienna IV

cc: Perm. Mission
Metternichg. 3
A-1030 Vienna

cc: Perm. Mission
Rennweg 27
A-1030 Vienna

cc: Perm. Mission
Renngasse 10/V
A-1010 Vienna

cc: Perm. Mission
Reisnerstr. 40
A-1030 Vienna
MEMBERS

USA
Dr. Glen W. Wensch
Special Assistant
Division of Reactor Development and Technology
U.S.A.E.C.
Washington, D.C. 20545

Alternates

Mr. Merrill J. Whitmann
Assistant Director For Program Analysis
Division of Reactor Development & Technology
U.S.A.E.C.
Washington, D.C. 20545

Mr. A. Nelson Tardiff
LMFBR Program Manager
Office of Project Management
Division of Reactor Development and Technology
U.S.A.E.C.
Washington, D.C. 20545

REPRESENTATIVES

ENEA
Mr. L.W. Boxer
Head of Technical Division
34, boulevard Suchet
Paris 16ème
France

Mr. L.W. Boxer
Head of Technical Division
34, boulevard Suchet
Paris 16ème
France

CEC
Mr. H.J. Allgeier
Directorate General
Industrial, Technological and Scientific Affairs
200, rue de la Loi
Brussels
Belgium

Dr. W. Haussermann
Technical Division
38 boulevard Suchet
Paris 16ème
France

Scientific Secretary of the IWGFR

Dr. E.I. Inyutin
Division of Nuclear Power and Reactors
International Atomic Energy Agency
Kärntner Ring 11-13
P.O. Box 590
A-1011 Vienna
Austria

cc: Mr. Fischer
Mr. Spano
Mr. Inyutin
Registry