



International Atomic Energy Agency    INDC(NDS)-466

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**I N D C** INTERNATIONAL NUCLEAR DATA COMMITTEE

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**IAEA INTERNATIONAL DATABASE ON IRRADIATED  
NUCLEAR GRAPHITE PROPERTIES**

**6<sup>TH</sup> MEETING OF THE TECHNICAL STEERING COMMITTEE  
(16-17 September 2004, Plas Tan-Y-Bwlch, Maentwrog, Gwynedd, UK)**

**Prepared by:**

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**December 2004**

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## **Abstract**

This report summarizes the Consultant Meeting “6th Meeting of the Technical Steering Committee for the International Database on Irradiated Nuclear Graphite Properties” held on 16-17 September 2004 at Plas Tan-Y-Bwlch, Maentwrog, Gwynedd, UK. The purposes of the meeting were to review the matters and actions identified in the previous meeting, undertake a review of the current status of the database and to make recommendations for actions for the next year. The purposes of the meeting were fully met. This report contains the current status of the identified actions as well as a summary of the recommendations on enhancements to the database.

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## Table of Contents

<b>Welcome</b> .....	5
<b>Minutes and Agenda</b> .....	5
<b>Presentation on the Database Version 2.0 – Improvements and Extension of the Software</b> .....	5
<b>Preparation and Verification of Future Data Input</b> .....	7
<b>Review of Members’ National Positions and Special Issues</b> .....	8
<b>Position of Observing Member States in Regard to Database Membership</b> .....	9
<b>Sponsors Positions, Users Positions, IAEA Position</b> .....	10
<b>Summary of the Discussion</b> .....	11
<b>Presentation of the French CEA Nuclear Graphite Database</b> .....	11
<b>Report to Next TWGGCR</b> .....	11
<b>Security Review (<i>standing Agenda item</i>)</b> .....	11
<b>Relevant Issues arising from ASME or ASTM Meetings on Graphite Standards ...</b>	11
<b>Future International Nuclear Graphite Specialists’ Meetings</b> .....	12
<b>Summary of Closed Session Business (<i>for inclusion in General Minutes</i>)</b> .....	12
<b>Summary of Actions</b> .....	13
<b>Dates of Next Meetings</b> .....	14
 <b><u>Appendices</u></b>	
<b>Appendix A: List of Meeting Participants</b> .....	15
<b>Appendix B: Meeting Agenda</b> .....	19
<b>Appendix C: Financial Summary</b> .....	25
<b>ANNEX: Proposal to IAEA from the Technical Committee</b> .....	27



**IAEA Consultants Meeting, “6th Meeting of the Technical Steering Committee for the International Database on Irradiated Nuclear Graphite Properties”**

**Plas Tan-Y-Bwlch, Maentwrog, Gwynedd, UK  
16-17 September 2004  
Executive Summary**

**Chairman: A.J. Wickham  
Scientific Secretary: D. Humbert**

**Welcome**

The Chairman welcomed everyone to Plas Tan-Y-Bwlch, the residential study centre of the Snowdonia National Park Authority, and noted the considerable interest from observers at the meeting which included representatives of all database sponsors and also a number of Member States which may have a future interest in becoming Members of the project. He extended a special welcome to the new Japanese representative, Mr. Shibata, and offered apologies on behalf of the Lithuanian representative, Mr. A. Smaizys, who was unable to attend.

Mr. Clark added a welcome on behalf of the IAEA, confirming the continued view of that organisation of the importance of the project.

**Minutes and Agenda**

The Chairman stated that the Minutes of the previous Committee Meeting (October 2003, Vienna) would be taken by the full Members in a final ‘closed’ session of the Committee Meeting, when matters such as financial arrangements and contracts would be discussed. The meeting then approved the Agenda.

He asked why these Minutes had appeared (for the first time) as an INDC report. Mr. Humbert explained that this was the correct procedure, which had apparently not been adhered to previously. It had been an error that the Minutes report had been marked ‘restricted’. He also stated that the Minutes are published on the project’s web page: <http://www-amdis.IAEA.org/graphite>

Minutes of any closed session *are* restricted (for reasons of commercial confidentiality) and will therefore only be issued to full committee members. It was agreed that the Minutes would be circulated to members before issue, for any errors to be corrected.

**Presentation on the Database Version 2.0 - Improvements and Extension of the Software**

Mr. Hacker first gave a short presentation of IDD and history of the database, and then proceeded to demonstrate the new version 2.0 of the database. It was generally acknowledged that there had been considerable improvement in the search functionality compared with Version 1.2, as discussed in detail at two previous Committee Meetings. A number of software ‘bugs’ had been found in this Version 2.0 by committee members, and accordingly it had not yet been issued to sponsors or other authorised users. A number of these ‘bugs’ had now been corrected, but there was still some instability in the program.

A discussion took place to report any additional ‘bugs’ and, in the course of this, members and observers suggested numerous further improvements compared with those which had been specified by the previous Committee Meetings.

It was decided to freeze the existing Version 1.2 and not to add further data in the old format. It was clear that a number of additional changes to Version 2.0 were generally desired, along with the addition of further prepared data files and ‘upgrading’ of previous files from the older Version. These are summarized in the Annex to these Minutes. Version 2.1 should be ready by end of year.

It was evident that observers, many of whom were Database users, had a significant number of additional improvements in mind, and there was a general feeling that the specification for Version 2 had been inadequate despite having been agreed to in previous Committee Meetings. The majority of these suggestions were extremely helpful, especially regarding issues of blank entries not being ‘read’ as ‘zero’, the expression of uncertainties, etc., and are noted in the Annex which represents the list forwarded to IDD following the meeting.<sup>1</sup> Other suggestions were in the nature of a radical development of further relational search capability – i.e. a Version 3 - although other users simply favoured the compilation of copies of the full text of reports.

A discussion followed on the nature of the Committee function. A number of people felt that there should be a Technical Working Group considering functionality and user requirements. The present committee members had been appointed by their Member States primarily as graphite specialists with an interest in retaining data on graphite irradiation performance, and were not database functionality specialists. These currently appointed members reviewed their position during the ‘closed session’ and took the view that they were not an appropriate group to form such a Technical Working Group. However, the views of observers were noted and will be discussed in detail in a subsequent meeting.

A few others important points were raised during the discussion:

- The value of ‘training’ for those most involved (currently Mr. Haag and Mr. Wickham) on how to load new data and how to extract old files from the previous Version for upgrading;<sup>2</sup>
- There was an error in the inputting of fluence: the default unit had previously been agreed as dpa and this needed correction to avoid confusion;
- Mr. Neighbour suggested that it could be efficient to discuss user experience and suggestions for improvements on an e-mail distribution list. He offered to create such a list as the basis of a ‘User Group’
- Mr. Humbert will check to what extent relational database software experience and data addition (etc.) could be done inside the IAEA;
- The possibility of translating the imbedded User Guide, considered to be a valuable improvement which negated the need for a paper User Guide, into other languages, was raised.

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<sup>1</sup> In the event, following a review of their position, IDD has declined some of these requests.

<sup>2</sup> This is now extremely important since, subsequent to the meeting, IDD have indicated to the IAEA that they do not wish to be involved in further work on this project.

It was pointed out that Version 2 placed all data in a single file, and that Microsoft Access may impose some upper limit on the number of data entries which can be handled. It was agreed to look into this.

### **Preparation and Verification of Future Data Input**

Mr. Haag presented some additional problems encountered during data compilation. Some improvements have been proposed:

- Applied stress: tensile or compressive. This implies a negative or positive value.
- Change of unit for the creep coefficient
- Orientation of sample: parallel or perpendicular (and properties separately measured in these two orientations could lead to a need for two different entries).
- $X_t$  values to be introduced.
- Problems have been encountered with some of the JAERI data provided over the past 3 years. These problems appeared to arise through incompatible character sets in use on Japanese and European computers. There were also published data which had been classified as 'L2 Restricted'<sup>3</sup>. Mr. Shibata undertook to seek to resolve the uncertainties, as he was, unfortunately, not involved in the compilation of the data set himself and could not immediately provide the explanations.
- Some data are related to sets of samples. The question is how to introduce these data into the database unambiguously.

Responding to this presentation, it was suggested that the process for Data Contribution should be written down. Essentially, this would provide data contributors with more than the basic template – a set of instructions regarding units etc. and ensure that there is no doubt introduced through imprecise definitions such as 'parallel' and 'perpendicular'. The Committee will need to consider how this might be achieved.

A discussion on QA of data input followed. The Chairman commented that he was unclear whether the QA of the original data, or of its copying across to the Database, was at issue. Original data could be in error for a number of reasons and this would not always be apparent, although some obvious typographical and calculational errors had been found during preparation of data by Mr. Haag. Mr. Davies offered to participate in the QA of data input on a cost-free basis, when the formal route for this had been resolved.

Mr. Heys mentioned an independent UK database which might be available to add alongside the existing data. He, along with Mr. Gerstgrasser, stated that Version 2.0 was not a relational database, although what had been delivered was precisely what had been specified - largely at the recommendations of Mr. Srinivasan of the US NRC - at the previous Committee Meeting and described there *as* relational.

There was a general view that the future input of data needed to be focussed on 'where it is used' – Committee Members felt that this was exactly what already occurred (see next item) but undertook to review this.

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<sup>3</sup> This issue has now been resolved, and the published data will become Unrestricted.

It was also agreed, following a short discussion about the copying of entire reports into the database rather than just the data they contained, that any report crossing a desk for data input should also be copied and archived.

### **Review of Members' National Positions and Special Issues**

In introducing this topic, the Chairman invited Member States' representatives to identify who were the current users of the Database.

Germany: Mr. Haag stressed that the principal interest of FZJ remained the support of the South African PBMR project, understanding the behaviour of older graphites under irradiation and their relevance for identifying the future graphites. Stress analysis was a particular issue and matrix materials were also important. FZJ was the only Database user.

Netherlands: Mr. Vreeling stated that the principal interest was the European HTR, with a current irradiation program at Petten on a range of existing graphites, of which IG-110 was used as a reference material. The Chairman requested that the new irradiation data might be made available to the Database. Mr. Vreeling, with Mr. Davies, agreed to consider this option and to discuss it with their European colleagues. NRG Petten was the only Database user.

USA: Mr. Burchell reported that the US Nuclear Regulatory Commission had stopped all work on HTR in April, which was a reason why data promised at the last meeting had not been forthcoming. Irradiation-creep data on H-451 graphite were already in spreadsheet form, however. Current interests remained in changes in crystal strain, and the properties of Graphol. ORNL, INEEL and NRC are Database users. Whilst his view was that the IAEA Database would be the preferred Database for the Generation IV reactor program, the ASTM was preparing to launch its own nuclear graphite database at the behest of the NRC.

Mr. Burchell therefore concluded that the way forward was to improve and expand the existing Database – above all, to collect data as rapidly as possible subject to resources. The Chairman commented that he found it odd that some organisations, knowing of the IAEA Database, chose to establish alternatives rather than to participate fully in the present project.

Japan: Mr. Shibata confirmed that Japan has presented all the data it wished to offer. JAERI now wished to see an evaluation of the existing information, as mentioned at the previous meeting in the form of a written comment. It was still not entirely clear to the Committee what Japan wished to happen, or how it would be resourced. Mr. Shibata emphasised the importance of QA of the information, and also undertook to clarify the situation on JAERI's proposals. He felt that these were along the lines of determining whether all relevant data were held and whether they were 'good' data or not. Mr. Haag offered a message to Japan, stressing the importance of their continued participation and their seeking to influence the position.

Lithuania: The Chairman presented a note from the Lithuanian representative confirming that their prime requirement was assistance with decommissioning the Ignalina plant. There was no information on progress with providing translations of published Russian information.

United Kingdom: As was very clear from the preceding discussions, the principal interest within UK users was life extension of existing plant. Additional data were to be made available from the reactor-operating companies. The current users were BNFL NSTS, British Energy, NNC Ltd and four Universities undertaking contract work for the reactor operating companies. There was little interest in decommissioning aspects; NNC Ltd were, however, involved in the European HTR project.

Conclusions on these discussions:

- Need of a real specification for the graphite database, development should be fully relational. Proposition for a Technical Meeting for new specifications<sup>4</sup>.
- Database not yet used adequately; there is a need for a stabilized interface and a greater amount of data
- Sponsors should be issued with Version 2.1 as soon as a fully operation version is available.
- The website is maintained by the IAEA (Nuclear Data Section). Members should advertise the website.

The Chairman commented that Database funding is extremely limited and this is the principal reason that progress has been very slow and that compromises have had to be made. If a highly sophisticated Database structure is required, it will have to be paid for.

### **Position of Observing Member States in Regard to Database Membership**

China: INET is ready to supply data for the database and has authorised the immediate inclusion of results published at the INGSIM meetings. INET is encouraging the authorities in China to make a formal application to IAEA for membership

Korea: Mr. Chi said that consideration of membership by Korea is still continuing, following his government's approval of the Korean HTR project in March 2004. He hoped to offer ion-irradiation data when an application was made to IAEA. He was pleased to see the Database collecting data for future design projects, and its existence gave him comfort. He also would wish information on matrix materials to be collected.

France: Those present from France stated that there was an encouraging position for a French membership from CEA: however, higher authorities remained to be persuaded of the value and perhaps about the security. He hoped to have clarified this before the next meeting. EdF identified decommissioning as their principal interest (impurities, oxidation, waste management) whilst CEA also has continuing interests in HTR development and fusion technology. Mr. Bonal also went on to comment that he (i.e. CEA) had interests in oxidation rates, fracture toughness, hardness and grain size (in relation to cracking). Mr. Rahmani then expanded his comments, expressing disappointment with the current Database for the lack of useful information for decommissioning. As an example, he commented that, for his interest, it was thermal fluence rather than fast fluence that determined the behaviour of the impurities he would have to deal with. He felt that any new efforts to expand the decommissioning activity within the IAEA Database would be too late for EdF.

South Africa: Mr. Mitchell concurred that there must be a distinction between collecting existing data and improving the infrastructure, for which there are experts elsewhere. South Africa has not indicated any desire for membership beyond the sponsorship of the PRMR Co.

#### **Conclusion:**

- Countries interested in de-commissioning should provide a template to start collecting data. The current Committee felt that it was not possible to start an additional activity in this area themselves, or at least the priority was much lower than conservation of existing data.

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<sup>4</sup> In view of the subsequent withdrawal of IDD, an initial approach has been made to independent experts in Germany and these will be reviewed, along with recommendations from the IAEA Nuclear Data Section, at the next Committee Meeting.

## **Sponsors Positions**

The Chairman invited the sponsors representatives to comment on what had been an energetic debate. The Toyo Tanso representatives comment on the lack of a clear result for their five years' sponsorship, but agreed that the Database should continue to grow, and that the emphasis must be on continued data collection and not software development, although the latter was desirable.

For Graftech, Mr. Homerin also concurred that the sponsors needed to see some result from their financial input. However, Graftech's interest was to sell graphite and the compilation of irradiation data was crucial to this aim.

For SGL, Mr. Gerstgrasser pointed out that the priority is to set a new data structure for the database and to develop a new software.

## **Users Positions**

The Chairman sought a summary of the position of the Users on the current status. The principal input to the debate on this had come from the UK users and from Mr. Gerstgrasser.

Mr. Reed offered a pictorial illustration of the relationship between the Database, the reactor operators or designers, and their problems. He stated that he was not offering a solution, but seeking to show the importance of 'placing' the database activity in its best context in relation to users requirements. Mr. Heys summarised a lengthy discussion in the terms that a lot had been achieved, the end use now needed better definition, there should be a specification of what data was relevant (e.g. graphites only, rather than, for example, matrix material), and that it was an appropriate time to stand back and take a long view. He also added that there was a possibility that additional funding might be available if the project agreed to follow these aims.

Mr. Gerstgrasser stated that SGL *doesn't* need reports – it is interested in the data, after appropriate 'error trapping'. He urged the Committee to work to get the structure right, but to start with the entry of data. He also stressed that any further software upgrade should be conducted by highly qualified personnel rather than graphite specialists with an interest in database software.

## **IAEA Position**

The Chairman invited Mr. Clark to offer a view on the debate.

Mr. Clark began by picking up on the points made by various speakers regarding the small funding available for the activity, being dependent upon voluntary contributions from sponsors at this time. He stated that he thought the only reason that the project was extra-budgetary was because it contained Restricted data. It might be possible to separate the unrestricted data project from the rest, and acquire additional funding to support that part of the development. Since this viewpoint was completely different from previous comments from the Division of Nuclear Power at the IAEA, he was asked to clarify this position as a matter of urgency.

Mr. Clark also agreed that the capture of data was the principal objective of the project. However, he agreed that the issues regarding the user interface were very significant, and thought that the Nuclear Data Section now had suitable specialists who could advise. The Committee would take their advice as soon as possible.

## **Summary of the Discussion**

The Chairman thanked everyone for a dynamic debate, but pointed out that there remained very divergent views in some topic areas. For example, the principal interest of UK operators – extending reactor life – was not the interest of the majority of Database Member States and that the development of the HTR was the majority interest. He felt that the project could not cope with diversification into decommissioning issues at this time but others were welcome to take up this issue as a sub-group. There seemed to be a general majority in favour of concentrating on capturing existing data, and leaving the software upgrading to more suitable experts. The issues of whether to archive data or documents and whether to include matrix material data clearly remained controversial, and the following presentation was clearly relevant to the first of these issues.

The issue of archiving documents, however, provoked a further discussion amongst those in favour. Mr. Neighbour commented that the existence of a scanned document can show it to have been peer reviewed (QA issue). Mr. Davies concurred from the design viewpoint, and said that the resources for such an activity lie in the user companies – he thought for example that NNC Ltd could offer to support this activity. Additional offers to fulfil such an activity came from Mr. Mitchell (PBMR Co.) and Mr. Rambharos (South African NRC), and from Mr. Gerstgrasser (SGL).

The Chairman said the Committee, faced with such divergent views, would review the whole position in detail, starting in its closed session later in the day.

## **Presentation of the French CEA Nuclear Graphite Database**

Mr. Bonal made a brief presentation of the CEA DOCMAN database held at Saclay. This consisted of a large collection of documents from French organisations and elsewhere, which he had scanned over a period onto CD-ROM. The collection of 24 CD-ROMs was also available to EdF and other authorised French users. He hoped that the arrangements provided a useful illustration of how document archiving could be achieved and that, in due time, it might be possible to integrate it with the IAEA database.

## **Report to Next TWGGCR**

The Chairman said that the next meeting of the IAEA TWGGCR would take place in Manchester, UK, in January 2005, and that he would prepare a short review of the current Database position to present at that meeting.

## **Security Review (*standing Agenda item*):**

No new issue arose since the last meeting in 2003.

## **Relevant Issues arising from ASME or ASTM Meetings on Graphite Standards**

ASME: no relevant issue

ASTM: USA will have its own database. Hopefully it will be possible to transfer the data to the IAEA Graphite Database.

## **Future International Nuclear Graphite Specialists' Meetings**

It was resolved that the connection of the INGSM meetings to the IAEA Graphite Database should remain, and that:

- A representative of the Database Steering Committee should be involved on the INGSM organising committee
- The location and sponsorship (if any) of the INGSM meetings should be agreed with the Database Committee.
- The INGSM must continue to focus on Nuclear Graphite

Franz Gertgrasser announced that SGL would kindly sponsor INGSM-6 in Chamonix, France in September 2005, and this offer was accepted enthusiastically.

## **Summary of Closed Session Business (*for inclusion in General Minutes*)**

The Committee approved the Minutes of the previous Committee Meeting.

The Committee reviewed the financial position of the Database project.

The Committee discussed the extensive debates of the earlier part of the meeting. There was general surprise that the delivery of Version 2, apparently close to a previously-agreed specification supported by numerous observers, had now excited so much comment and criticism. The delivery of the product by IDD with 'bugs' in the system had been unfortunate and, although the decision to withhold it from Sponsors until these had been resolved had been the right one, it had created a bad impression with them.

A Plan of Action was agreed:

- Version 2.1 would be issued after essential debugging, with Unrestricted data only;
- IDD would be invited to quote against the list of desired improvements (as specified in the Annex)<sup>5</sup>
- Focus efforts on adding additional data to Version 2;
- Form a core team to develop a structure definition and documentation to go out to provide the relational database apparently required by some users. It was thought that this group should include some representation from the Committee and the IAEA but that others, such as Messrs. Heys, Gerstgrasser and Mitchell may wish to be involved in this activity.

The need for appropriate users to be able to add and extract files from the working database version into Excel for upgrading was stressed. Mr. Humbert will check if it is possible to do this within the Agency if other routes proved difficult.

Mr. Shibata agreed to address the issue of the latest Japanese requirement to classify some published data as L2 Restricted<sup>6</sup>

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<sup>5</sup> This has, of course, now been compromised by IDD's decision to withdraw.

To facilitate the possibility of some in-budget funding being found within the Agency, the possibility of putting some unrestricted data on the web was raised.

The Committee agreed to have an additional meeting, *in camera*, after liaison officers had had time to consult their constituencies about the way forward with the Database, and to formalise suggestions made at Plas Tan Y Bwlch. This special meeting would take place in Vienna in March 2005. The next “routine” meeting would also be held in Vienna, on the Thursday and Friday in September preceding INGS-6.

In regard to INGS-6, it was agreed that the Programme Committee would consist of one or two members of the Database Committee (Messrs. Vreeling, Burchell and Haag were nominated), SGL Carbon representatives (Messrs. Tahon and Gerstgrasser at least), and a French nominee (an initial approach to Mr. Robin was agreed). Mr. Burchell agreed to liaise directly with Mr. Gerstgrasser and with Mr. Christfried Schlosser about the technical programme.

Mr. Wickham was unanimously elected to continue in office as Chairman for the period 2004-2007.

### **Summary of Actions**

*(Actions are on the whole Committee unless otherwise indicated. A number of the following points can only be resolved following the completion of Action 1, and will therefore be Agenda items for the special meeting in March 2005)*

1. Committee Members to discuss the issues raised at this meeting in their own Member States with the Database users, prior to a new discussion to be held in March 2005 to resolve the way forward;
2. Mr. Clark to investigate the possibility of in-budget funding from the IAEA, and the conditions necessary to make it possible;
3. Mr. Wickham to investigate the potential offers of additional funding made by HSE and by British Energy, again with identification of the conditions;
4. Mr. Humbert to resolve the debugging of Version 2.0 with IDD;
5. The committee, initially through Messrs. Haag and Wickham, to have the ability to add additional data to the Database on behalf of the IAEA as IPR holder, and also to understand how to extract files for upgrading;
6. Determine a strategy for implementation of the improvements to Version 2 seen as important by the Users;
7. Mr. Neighbour to establish a Database Users e-mail discussion list;
8. Resolve any remaining omissions and errors relating to extant data and input parameters in the standard template, as detailed in the meeting;
9. Mr. Shibata to resolve issues of unpublished data and incompatible character sets within the Japanese data;
10. Consider QA requirements for data held in and input into the Database, and then offers made to assist with the data input process;

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<sup>6</sup> Now resolved.

11. Take a position on the priorities for action with regard to be Database;
12. Take a position on the function of the present Committee<sup>7</sup>;
13. Consider the formation of a separate technical working group, “core team”, for development of the Database, and its appropriate nominees;
14. Review funding arrangements in line with agreed priorities and reach appropriate decisions;
15. Take a position on the possibility of launching either an integrated or parallel activity on data appropriate to decommissioning;
16. Maintain data provision, as previously agreed by contributors;
17. Messrs. Burchell, Vreeling and Haag to co-ordinate activities with Messrs. Gerstgrasser and Schlosser in regard to the technical programme and organisation of INGSMS-6.

### **Dates of Next Meetings**

The steering committee will meet twice during 2005. Next meeting (2-days closed meeting) is scheduled in Vienna in the IAEA Headquarters on 16<sup>th</sup> and 17<sup>th</sup> March 2005.

The 2<sup>nd</sup> (open meeting) is scheduled to be held in Vienna before the INGSMS-6 in France - on 15<sup>th</sup>-16<sup>th</sup> September 2005 (dates revised since the Committee Meeting because of a change of date for INGSMS-6).

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<sup>7</sup> A corollary to this action may be a need to re-visit the terms of the Working Arrangement.

**IAEA Consultants' Meeting: "6<sup>th</sup> Meeting of the Technical Steering Committee for the International Database on Irradiated Nuclear Graphite Properties"**

16 - 17 September 2004, Plas Tan-Y-Bwlch, Gwynedd, UK

Chairman: Dr. A.J. Wickham (United Kingdom)  
Scientific Secretary: Dr. D. Humbert (IAEA)

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## Appendix B

### **IAEA Consultants' Meeting: "6<sup>th</sup> Meeting of the Technical Steering Committee for the International Database on Irradiated Nuclear Graphite Properties"**

16 - 17 September 2004, Plas Tan-Y-Bwlch, Gwynedd, UK

Chairman: Dr. A.J. Wickham (United Kingdom)  
Scientific Secretary: Dr. D. Humbert (IAEA)

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### **MEETING AGENDA**

Thursday 16<sup>th</sup> September 2004

Commencing: 09:00

1. Welcome (IAEA, Chairman)
2. Administrative Details for the Meeting (*including comment on Item 23 of 'Closed Session'*)
3. Apologies for Absence
4. Review and Acceptance of the Agenda
5. Notes of the Previous Meeting and Matters Arising (*unless covered elsewhere on the Agenda*)
6. Form of the Meeting Notes to be Adopted NOTE 1<sup>8</sup>

*Coffee Break*

7. Presentation on Database Version 2.0 (*Dr. P. Hacker, IDD*) NOTE 2  
- Definition of Requirements for Corrections, Improvements and Extensions to the Software

*Lunch*

(the above Agenda item may continue after lunch as no time limit is set for the most important matter of Database Version 2.0)

8. Discussion on Extent of Requirement for a Specialist Software Provider following Resolution and Issue of Version 2.0 NOTE 3

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<sup>8</sup> kindly refer to Explanatory Notes appended.

9. *Re-Definition of the Future Activity* NOTE 4

10. Preparation and Verification of Future Data Input NOTE 5

*Afternoon Tea Break ad-lib*

11. Review of Members' National Positions NOTE 6

Each Member present is requested to report under the following headings:

Data Provision for Input in the Next Year NOTE 7

Current Utilisation of the Database

Current National Position on the Needs for Specific Kinds of Data

Expectations from the Database in the Future

*whence:*

- 11.1 Germany
- 11.2 The Netherlands
- 11.3 USA
- 11.4 UK
- 11.5 Japan NOTE 8
- 11.6 Lithuania (*no representative, but Chairman will present*)
- 11.7 Sponsors' Representatives are then Invited to Comment
- 11.8 Representatives of Other Observing Member States are then Invited to Comment

12. Review and Reconciliation of National Positions and Agreement of Forward Programme.

*Conclusion of First Day (items can be carried over or brought forward to provide a finish time of approximately 1730h)*

Friday 17<sup>th</sup> September 2004

Commencing: 09:00

13. Members' Special Issues for Discussion

- Japanese proposal (made 2003) for data analysis
- Lithuanian proposal (made 2003) for parallel or extended database to cover decommissioning issues
- Any other relevant issues raised by Members or Observers, at the Chairman's discretion

14. Presentation from M. Bonal (CEA) concerning the French Nuclear Graphite Database

- Review of Database position on the inclusion of scanned (pdf) documents

*Coffee Break*

15. Position of Observing Member States in regard to Database Membership

- France

- Republic of Korea

- China

- Other Expressions of Interest (*if any*) NOTE 9

16. Report to Next TWGGCR (January 2005, UK) NOTE 10

17. Security Review (*standing Agenda Item*)

18. Relevant Issues arising from ASME or ASTM Meetings on Graphite Standards

19. Future International Nuclear Graphite Specialists' Meetings

- detach from Database activity and become 'stand-alone'?

- venue and date of INGS-6 (2005)

20. Issues or Comments Raised by Sponsors' Representatives and Observers

21. Any Other Business NOTE 11

Close of 'Open Session'

*Lunch break*

Commencing: 13:30

**Closed Session on Administrative Matters *for Committee Members (and IAEA) Only***

19. Financial Review of Database Activity

20. Sponsorship Expectations

21. Protocols between IAEA and Sponsors NOTE 12

22. Future Contracts

23. Role and Number of Observers and Sponsor Representatives at Future Meetings NOTE 14

24. Dates and Location for 2005 CM

*The Current Term of Office of the Chairman ends at this point*

25. Selection of CM Chairman, 2004-2007

NOTE 13

Close of Meeting

***Additional Notes to the Agenda***

1. *The IAEA adopted a new format following the 2003 CM, namely the issue of a report, which has not occurred before. Members are invited to comment on whether this is necessary/appropriate.*
2. *Version 2.0 software, working on a limited set of new data, mainly German and Japanese, has been issued to liaison officers only for the purpose of 'de-bugging' experience; there are a number of known faults and the objective is to define precisely the needs for improvements before acceptance and full issue of Version 2.0. After this meeting IAEA will agree a contract with IDD for the completion of this project.*
3. *The meeting is invited to consider whether there is any need for specialist services in the future, if the IT task reduces to the insertion of new data to a fixed template. Since the IPR will rest with IAEA, maybe all that is required is a training session for nominated Database members.*
4. *The proposal is to 'freeze' the Version 1 databases, whilst adding new data to Version 2 as rapidly as possible and upgrading files from Version 1 to the newly required format as soon as can be achieved, after which Version 1 can be abandoned.*
5. *Currently, data preparation is being carried out only by one Member with limited assistance from a second (although this latter is now hopefully to increase). The meeting is invited to debate the possibility to increase the number of persons willing to participate in this activity, which may otherwise be seen as a severe rate-limiting step to further expansion of the Database.*
6. *Most commitments for the provision of additional data for input which have made previously have not been met. The Chair considers that we should start afresh to agree a programme which can be achieved.*
7. **Members and observing representatives of participating organisations are invited to review the commitments previously made in committee meetings or in their government's formal letters of application to join the Database...**
8. *Some specific problems have been encountered with the Japanese data most recently received, including problems of computer keyboard character incompatibility. Dr. Haag will lead on defining these problems.*

9. *IAEA to advise of any interest or application officially received. As a S. African observer, the PBMR Co. representative (Sponsor) and/or the NNR Observer has the opportunity to provide a comment on the possible situation in S. Africa.*
10. *The TWGGCR meeting appears to have been moved from the planned venue at IAEA Vienna to Manchester University, UK.*
11. *The Chairman requests that any significant item to be raised under 'Any Other Business' should be advised as soon as possible, and certainly no later than the start of the meeting, in order to enable appropriate timing of the meeting to be established.*
12. *It is noted that there are frequent incompatibilities between the procedures of the IAEA and the paperwork expectations of Database sponsors. This appears to be worthy of discussion again since last year's discussion does not seem to have resolved all of the problems.*
13. *The Working Arrangement for the Database requires that the Committee Chairman must offer to stand down after a term of three years. All permanent committee members representing Member States, including the retiring Chairman, are eligible for selection as Chairman for the next three-year term.*
14. *The large number of Observers and Representatives at this year's CM may require some curtailment of their participation in order to make the meeting manageable. Item 23 is intended to review the performance of this CM and the role of Observers, in order to determine if any policy is necessary for future meetings.*

E. and O.E.

Prepared by Chairman, A.J. Wickham, 20<sup>th</sup> August 2004



**International Database on Irradiated Nuclear Graphite Properties**

FINANCIAL SUMMARY

(in US \$)

Period covered from **1 January to 31 December 2004**

<b>Project GRAPHIT</b>	<b>Income</b>	<b>Expenditure</b>	<b>Date</b>	<b>Contractor</b>	<b>Funds Available</b>
Unused Balance at 2004-01-01	39,335.94				
SGL (Germany)	-				
Toyo Tanso (Japan)	-				
PBMR (South Africa)	5,000.00		October		
GraphTech (USA)	2,000.00		March		
		3,750.00	February	Gerd Haag	
		9,100.00	January	Paul Hacker	
		3,750.00	June	Gerd Haag	
		3,750.00	November	Gerd Haag	
<b>Total</b>	<b>46,335.94</b>	<b>20,350.00</b>			<b>25,985.94</b>



## PROPOSAL TO IAEA FROM THE TECHNICAL COMMITTEE

### SPECIFICATION FOR IDD TO FINALISE VERSION 2.1

*(Note that this specification was submitted to IDD immediately before their decision to withdraw: not all items here will be addressed under the existing contractual obligation. It will now be necessary to the Committee to find an alternative route for the fulfilment of a number of these issues.)*

#### Essential Changes

1. There must be an unlimited number of search parameters.
2. Correct error on input default units – input fluence units are now dpa. This item should be resolved in co-operation with Dr. Gerd Haag.
3. Requests must be modifiable without having to reformulate a new one. The output form should propose two options: “modify request” and “new request”. *(Also, quote a cost for broadening the scope of this more widely – e.g. to enable the user to change the specified range for data, for example).*
4. Enable user definition of permanent defaults (column preferences etc.).
5. Show the search criteria (with filter if any applied) on the output form (whilst the committee considered that it is *not* necessary to export this information, this information could perhaps be included in the title of the file).
6. Show units at the head of columns on output forms (and items which can be changed should change with the conversion, *e.g. fluence units*).
7. “Start” button should become “new search” whilst there should be immediate access to searches which have already been stored.
8. “Blank entry” must not be taken as “=0”. The problem is the “0” is a value whilst a blank entry (empty cell) is not. By excluding blank values for a property the user needs to be aware that any record with this property empty will be excluded and will not appear on the output form. *(Advise a cost if this is a major item).*
9. “Graphitisation Temperature” appears to be missing from the dropdown parameter menus.
10. Add  $x_t$  and “Irradiation Facility” to parameters.
11. Consider units of creep coefficient – not currently in dpa<sup>9</sup>.
12. Provide written instructions for the insertion of new data files in the new template format.
13. Provide training to nominated persons<sup>10</sup> to enable item 12 above and also the extraction of files from Version 1 for re-templating.
14. Thoroughly test Version 2.1 final product on various computers to ensure that the problems of programme crashing are overcome, and demonstrate this to be the case<sup>11</sup>.

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<sup>9</sup> Seek advice if necessary from Dr. Gerd Haag or Mr. Arjan Vreeling. Applied stress, +/- ; differentiate tensile from compressive; orientation parallel or perpendicular – if both present will require two entries.

<sup>10</sup> Dr. G. Haag and Dr. A. Wickham as a minimum.

<sup>11</sup> To Dr. A.J. Wickham as a minimum.

15. Issue Version 2.1 which shall contain only unrestricted data and therefore requires no passwords.

### **Desirable Changes**

1. Find a way to present uncertainties / detection limits, when they are given.
2. Enable dynamic drop-down menus on a form to cross-check new input at the verification stage<sup>12</sup>.
3. If all displayed properties are blank, do not display or export these entries.
4. Advise on cost of showing “SQL Query Screen”<sup>13</sup>

### **Actions Placed upon IDD**

1. Check number of data entries permitted in Access (issue of all data being in one file now). Report to Dr. A.J. Wickham on behalf of the Technical Committee.

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<sup>12</sup> The intent here is to prevent typing errors and to overcome any problems where ambiguous entries are made such as in Grade Codes (“Gilsocarbon”, “Gilso”, Gilsonite”, gilsonite”...etc. etc. ). The feature should show directly the previously-entered codes when entering new names, as an *aide memoir*.

<sup>13</sup> A small window should open showing the request in SQL where the request can be modified. This is for specialised users only and is not viewed by the Technical Committee as a significant item.

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