For Official Use **NEA/NSC/DOC(2005)25**

Organisation de Coopération et de Développement Economiques
Organisation for Economic Co-operation and Development

30-Nov-2005

English - Or. English

NUCLEAR ENERGY AGENCY
NUCLEAR SCIENCE COMMITTEE

NEA/NSC/DOC(2005)25
For Official Use

INTERNATIONAL REACTOR PHYSICS BENCHMARK EXPERIMENTS PROJECT (IRPhEP)

Second Technical Review Meeting

2-4 November 2005
OECD Headquarters, Paris, France

English - Or. English

JT00195225

Second International Reactor Physics Benchmark Experiments Project (IRPhEP)
Technical Review meeting

2 – 4 November 2005
OECD, Paris

SUMMARY

The Second International Reactor Physics Benchmark Experiments Project (IRPhEP) Technical Review meeting was held in Paris, France, 2-4 November 2005. A total of 21 participants from Canada, Germany, Japan, Korea, Russian Federation, United Kingdom, United States, and two international organizations (Nuclear Energy Agency, and the International Atomic Energy Agency) attended the meeting.

The following individuals participated in the meeting:

J. G. Ahn	Korea Power Engineering Company
I. Attieh	Atomic Energy of Canada Limited
J. B. Briggs	Idaho National Laboratory
V. F. Dean	Consultant to Idaho National Laboratory
M. Ishikawa	Japan Atomic Energy Agency
T. Ivanova	Institute of Physics and Power Engineering
Y. Kim	International Atomic Energy Agency
I. Kodeli	OECD/NEA
R. D. McKnight	Argonne National Laboratory
T. Misawa	Kyoto University
B. C. Na	OECD/NEA
T. Newton	Serco Assurance
D. W. Nigg	Idaho National Laboratory
S. Okajima	Japan Atomic Energy Agency
J. Rowlands	Consultant
E. Sartori	OECD/NEA
L. Scott	Cover to Cover
Z. Szatmáry	Institute of Nuclear Techniques, Technical University of Budapest
A. Tchistiakov	Consultant
W. K. Terry	Idaho National Laboratory
U. K. Wehmann	Consultant

A complete list of IRPhEP participants and a copy of the final meeting agenda are given in Annex 1 and 2, respectively. A summary of required actions for each evaluation discussed during the meeting is given in Annex 3. Those persons having been assigned an action item which is unclear should contact Lori Scott or J. Blair Briggs for clarification as soon as possible. *Action items for evaluations that were either "approved" or "approved pending completion of action items" at the meeting should be completed, verified by internal and external reviewers (and subgroup members if one was formed), and an electronic copy of the revised evaluation should be submitted to Blair Briggs (j.briggs@inl.gov) by the specified completion date.*

Sixteen evaluations considered for the 2006 publication were formally discussed at the meeting. Eight of the sixteen evaluations will be officially published in 2006. The remaining eight evaluations still require additional work but will be included in the publication in 'DRAFT' format.

The status of additional evaluations that are either currently in progress or planned and/or archived and potentially available for evaluation are listed in Annex 4.

Proceedings of the November 2005 Meeting

- A discussion was held on sensitivity/uncertainty analysis in order to gain an appreciation for the amount of work that is required and an understanding of the level at which the group should work. Ideally, each measured parameter proposed as a benchmark should include a benchmark value for that parameter (i.e., the value that one should expect to obtain after incorporation of any biases that are introduced due to methods or modeling simplifications) and an associated uncertainty. The uncertainty should be a "best estimate" where possible; however, in the absence of sufficient supporting data, bounding values should be used. All uncertainties should be adjusted to 1σ values. Implementation was addressed on a case-by-case basis until the group comes to a better consensus on what can be achieved for the various types of measurements.

- The group discussed the revised evaluation guide, Version 8.8. Blair Briggs will revise this guide and submit it to the group prior to the end of November. Nuclear constants will be added to be used as a recommended set. Participants will be asked to review the guide and report any additional changes to Blair.

- The group was reminded that summaries and status forms of evaluations should be provided for each evaluation by evaluators. Summaries should be reviewed and approved by both internal and independent reviewers. Status forms simply need to be completed by the evaluators. Summary and Status forms will be linked, rather than included, in the actual evaluation.

- The group will publish its first edition of the Handbook by 31 March 2006. All evaluations approved as official or draft evaluations were assigned due dates. The planned publication schedule overlaps the publication schedule of the International Criticality Safety Benchmark Evaluation Project (ICSBEP). Therefore, it is essential that evaluators submit their evaluations by these given submission dates or they may not be processed in time to be included in the 2006 Edition of the Handbook.

- The group was asked to provide Blair Briggs with a list of additional commonly-used symbols and/or terms for inclusion in the format guide. These data should be submitted to Blair by 25 November 2005.

- The group agreed that data not being evaluated should still be provided in Section 1 for preservation purposes. However, models for data that are not evaluated should not be included in Section 3 and sample results should not be included in Section 4. Models and results can be provided in an appendix subsequent to Appendix A, again for preservation purposes.

- The cover page will denote which measurement types are reviewed by each reviewer when certain sections of an evaluation are reviewed by different independent reviewers (i.e., reviewers do not review the entire evaluation, but limit their review to areas of specialization or previously published ICSBEP evaluations for which the critical configuration was most often reviewed independently of the other measurement types)

- It should be noted on figures contained in the evaluations if they were drawn to scale or not.

- The group was reminded that results that are reported in Section 4 should be given in the form of 100(C-E)/C. Absolute results should also be reported.

- Personal communications with experimenters should be documented as footnotes within evaluations.

- The group was reminded that, for each measurement type, conclusions of acceptability should be included in the appropriate subsections of Section 2 and summarized in the appropriate subsection of Section 1.

- The preferred standard format for numbering tables and figures will be to number sequentially within one of the four major sections (e.g., For Section 2.0 tables/figures, label as Table/Figure 2.1, 2.2, etc.). Tables/figures should be numbered consistently within each evaluation.

- The meaning of compilation and evaluation and what work needs to be carried out for approval at the review meetings was clarified. The different sections for each experiment will contain:

  - Description (Section 1)
  - Evaluation (Section 2) - Evaluation includes sensitivity/uncertainty analysis of measured parameters described previously. Engineering judgement should be used to estimated or bound uncertainties that were not specified. Uncertainties in all measured parameters should be addressed at an appropriate level of detail.
  - Benchmark specification (Section 3)
  - Sample results (Section 4)
  - An Appendix with the code input as an example of the benchmark
  - Other information that is produced (e.g. comparison between different evaluators of code results not measured) should be provided in additional appendices.

  Each of the evaluation section or chapter requires conclusions, which should also be summarized in Sections 1.0 and 1.X.1

- Specific tasks to be carried out have been discussed again and agreed on with regard to Quality Assurance. Each experiment evaluation must undergo a thorough internal review by the evaluator's organization. The internal reviewers must verify:

  - The accuracy of the descriptive information given in the evaluation in comparison with the original documentation (published and unpublished)
  - That the benchmark specification can be derived from the descriptive information given in the evaluation
  - The completeness of the benchmark specification (generally requires setting up a model using only the information given in Section 3.)
  - The results and conclusions
  - Adherence to format

  In addition, each experiment must undergo an independent peer review by another working group member at a different facility. Starting with the evaluator's submission in the appropriate format, the independent peer reviewers must verify:

  - That the benchmark specification can be derived from the descriptive information given in the evaluation
  - The completeness of the benchmark specification
  - The results and conclusions
  - Adherence to format

A third review by the Technical Review Group verifies that the benchmark specification and the conclusions are adequately supported.

- Co-ordination with ICSBEP was discussed. This was found of particular importance because of the common interest in the critical configurations. It was unanimously agreed that
  - Any activity that would lead to duplication of effort would be avoided, because of cost in resources, and the need of coherence and consistency between the two projects.
  - The critical configuration description and evaluation, if included in ICSBEP, would be adopted as is for IRPhE, and made accessible by a hyperlink to the ICSBEP file copied into the IRPhE database. Feedback from IRPhE must be reported to ICSBEP, reviewed by them and if adopted, the corresponding file will be copied to IRPhE.
  - The critical configuration and evaluation that is carried out as the first chapter of IRPhE, if of interest to ICSBEP and if found appropriate, would simply be copied as is with all the other chapters into ICSBEP, where it can be accessed via a hyperlink.

- The group was reminded that an electronic IRPhE listserver or evaluator/reviewer forum was established at the NEA Data Bank to facilitate the communication between the different parties involved in the project and to keep an electronically ordered archive of the discussion.

- It was reemphasized that the INL can offer graphic arts assistance for anyone who would like it. All figures will normally need additional work by the INL graphic arts department in order to ensure compatibility.

- Tatiana Ivanova discussed a proposal IPPE intends to submit as an ISTC (International Science and Technology Center) project: "Development of Methodology for Uncertainty Assessment to Predict Neutron-Physics Parameters of the Innovative Nuclear Reactor Systems". Members have concluded that such development would be useful also for the IRPhE project. Therefore it was agreed that the IRPhE Secretariat write a letter in support of the proposed project.

When the IRPhEP technical review group meets next, it will have been approximately one year since the last meeting. This will be the only chance for the group to review and approve evaluations for publication (draft or formal). *It is important that thorough internal and independent reviews be completed prior to the meeting, so the evaluations brought before the group can be approved with a minimal amount of rework.*

In order to avoid an unmanageable number of independent reviews just prior to distribution for our next meeting, evaluators and internal reviewers should complete their work as soon as possible and send their evaluations to the INL for independent review (or directly to the independent reviewer if prior arrangements have been made). The last possible date for which independent reviews can be initiated, with a reasonable chance of completion and resolution of comments in time for the next meeting, is August 31, 2006. Independent reviews will be performed on a first received first reviewed basis. If more evaluations are received on August 31, 2006, than can be thoroughly reviewed, the later evaluations will be deferred until the next meeting. Please make every effort to complete your work in a timely manner and submit ***only*** evaluations that have successfully undergone ***thorough internal review***.

The location of the next IRPhEP technical review meeting is tentatively scheduled to be held in Paris, France on 25-27 October 2006; however, lack of conference room availability may require that the dates be changed to 23-25 October 2006. (Dates may need to be extended depending on the number of evaluations that are ready to be reviewed by the technical group.) Only evaluations that have successfully undergone both internal and independent reviews will be submitted. Details of the meeting will be provided at a later date.

Annex 1

International Reactor Physics Benchmark Experiments Project
Technical Review Meeting

2-4 November 2005

OECD Headquarters

Final Agenda

Wednesday, 2 November 2005

SESSION I : GENERAL ISSUES AND CONCERNS

- Welcome [Briggs/Sartori]
- Introduction of Participants [All]
- Comments from INL [Briggs]
- Review of 2004 Action Items [Scott]
- Level and Depth of Sensitivity Analysis Required for IRPhEP [Sartori]
- Format Issues [Briggs]
- International Handbook of Evaluated Reactor Physics Benchmark Experiments [Scott]
- Publication Schedule [Briggs]

SESSION II: APPROVAL OF EVALUATIONS

1. DIMPLE-LWR-EXP-001 CRIT-BUCK-SPEC-REAC-COEF-RRATE (LEU-COMP-THERM-048)
   Light Water Moderated and Reflected Low Enriched Uranium (3 wt.% 235U) Dioxide Rod Lattices DIMPLE S01 [Newton]

SESSION III: APPROVAL OF EVALUATIONS (continued)

2. DIMPLE-LWR-EXP-002 CRIT-BUCK-SPEC-REAC-COEF-RRATE (LEU-COMP-THERM-055)
   Light Water Moderated and Reflected Low Enriched Uranium (3 wt.% 235U) Dioxide Rod Lattices DIMPLE S06 [Newton]

SESSION IV: APPROVAL OF EVALUATIONS (continued)

3. JOYO-LMFR-RESR-001 CRIT-REAC-COEF
   JNC Experimental Fast Reactor JOYO Mk-I Core Physics Tests [Ishikawa]

4. BFS1-LMFR-RESR-001 CRIT-SPEC-REAC-KIN-RRATE
   BFS-73-1 Experiment: Benchmark of a Fast Reactor Core with Metal Uranium Fuel of 18.5% Enrichment [Ivanova]

SESSION V: APPROVAL OF EVALUATIONS (continued)

5. PFACILITY-VVER-EXP-001 CRIT-RRATE (LEU-COMP-THERM-061)
   VVER Physics Experiments: Hexagonal (1.27-vm Pitch) Lattices of U(4.4 wt.% 235U)O_2 Fuel Rods In Light Water, Perturbed by Boron, Hafnium, or Dysprosium Absorber Rods, or by Water Gap With/Without Aluminium Tubes [Dean]

6. ZR6-VVER-EXP-001 CRIT-BUCK-SPEC-REAC-COEF-RRATE (LEU-COMP-THERM-015 and 036)
   The VVER Experiments: Regular and Perturbed Hexagonal Lattices of Low-Enriched UO_2 Fuel Rods in Light Water [Szatmary]

Thursday, 3 November 2005

SESSION VI: APPROVAL OF EVALUATIONS (continued)

7. ZPPR-LMFR-RESR-001 CRIT-SPEC-REAC-RRATE
   ZPPR-10a Experiment: A 650 MWE-Class Sodium-Cooled MOX-Fueled FBR Core Mock-Up Critical Experiment with Two- Homogeneous Zones and Control-Rod Withdrawal [Ishikawa]

8. HTR10-GCR-RESR-001 CRIT-REAC Evaluation of the Initial Critical Configuration for the HTR-10 Pebble Bed Reactor [Terry]

SESSION VII: APPROVAL OF EVALUATIONS (continued)

9. VENUS-PWR-EXP-001 BUCK-RRATE-POWDIS
   VENUS-1 PWR UO_2 Core 2-Dimensional Benchmark Experiment [Ahn]

10. VENUS-PWR-EXP-003 RRATE-POWDIS
    VENUS-3 PWR UO_2 Core 3-Dimensional Benchmark Experiment [Ahn]

SESSION VIII: APPROVAL OF EVALUATIONS (continued)

11. VENUS-PWR-EXP-002 CRIT-BUCK-RRATE-POWDIS
    VENUS-2 PWR MOX Core Measurements [Na]

12. ZEBRA-LMFR-RESR-001 CRIT-SPEC-REAC-COEF-RRATE
    The ZEBRA MOZART Programme Part 1. MZA and MZB, ZEBRA Assemblies 11 and 12 [Rowlands]

SESSION IX: APPROVAL OF EVALUATIONS (continued)

13. ZEBRA-LMFR-RESR-002 CRIT-BUCK-REAC-RRATE
    The ZEBRA MOZART Programme Part 2. MZC and the Control Rod Studies ZEBRA Assembly 12 [Rowlands]

14. ZEBRA-LMFR-RESR-003 CRIT-REAC-RRATE
    Fast Critical Experiments in Plate and Pin Geometry Form. The ZEBRA CADENZA Cores, Assemblies 22, 23, 24 and 25 [Rowlands]

Friday, 4 November 2005

SESSION X: APPROVAL OF EVALUATIONS (continued)

15. DCA-HWR-EXP-001 CRIT-SPEC-RRATE
    Deuterium Critical Assembly with 1.2% Enriched Uranium varying Coolant Void Fraction and Lattice Pitch [Hazama]

SESSION XI: APPROVAL OF EVALUATIONS (continued)

16. CROCUS-LWR-RESR-001 CRIT-REAC-KIN Kinetic Parameters and Reactivity Effect Experiments in CROCUS [Sartori]

- Introductory Material [Briggs]

SESSION XII: DISCUSSION AND CONCLUSIONS

- Evaluations planned for 2006 and following years [Sartori]
- ISTC Proposal: Development of Methodology for Uncertainty Assessment to Predict Neutron-Physics Parameters of the Innovative Nuclear Reactor Systems [Ivanova]
- Date of the next meeting [Briggs]

Annex 2

International Reactor Physics Benchmark Experiments Project

List of

Members and Technical Review Group Participants

Status 15 November 2005

CANADA

ATTIEH, Ibrahim
Reactor Core Physics Branch, SP1F3
Atomic Energy of Canada Limited
2251 Speakman Drive
Mississauga,
Ontario L5K 1B2
Tel: +1 (905) 823 9040 x 6496
Fax:
Eml: attiehi@aecl.ca

FRANCE

TCHISTIAKOV, Andrei
29, le Tivoli, Allée des Peupliers
13090 Aix-en-Provence
Tel: +33 4 4221 0899
Fax: +33 44298 1665 b
Eml: Andrei.Tchistiakov@wanadoo.fr

GERMANY

WEHMANN, Udo-Karl
Wiesenstrasse 53
31134 Hildesheim
Tel: +49 5121 130409
Fax: +49 5121 130409
Eml: udo.wehmann@t-online.de

HUNGARY

SZATMARY, Zoltan
Inst.of Nuclear Techniques
Budapest University of
Technology and Economics
Muegyetem rakpart 9
H-1521 BUDAPEST
Tel: +36 (1) 463 4172
Fax: +36 (1) 463 1954
Eml: szatmary@reak.bme.hu

JAPAN

ISHIKAWA, Makoto
Reactor Physics Analysis and Evaluation G
Advanced Nuclear System R & D Directorate
Japan Atomic Energy Agency (JAEA)
4002 Narita-cho, Oarai-machi
Ibaraki-ken 311-1393
Tel: +81 29 267 4141 X 5720
Fax: +81 29 267 1676
Eml: ishikawa.makoto@jaea.go.jp

MISAWA, Tsuyoshi
Research Reactor Institute
Kyoto University
Kumatori, Sennan, Osaka
590-0494 JAPAN
Tel: +81 724-51-2376
Fax: +81 724-51-2603
Eml: misa@kuca.rri.kyoto-u.ac.jp

OKAJIMA, Shigeaki
Research Group for Reactor Physics
Department of Nuclear Energy System
Japan Atomic Energy Agency (JAEA)
2-4 Shirakata, Tokai-mura, Naka-gun
Ibaraki-ken 319-1195
Tel: +81 29 282 53 25
Fax: +81 29 282 61 81
Eml: okajima.shigeaki@jaea.go.jp

KOREA (REPUBLIC OF)

AHN, Joon-Gi
Engineering Group Supervisor
Radiation Analysis Group
Korea Power Engineering Company, Inc.
150 Deokjin-dong Yuseong-gu
Daejeon 305-353
Tel: +82 42 868 4176
Fax: +82 42 861 0960
Eml: jgahn@kopec.co.kr

P.R. OF CHINA

* SUN, Yuliang
Nuclear Engineering
Institute of Nuclear Energy Technology
Tsinghua University
Beijing 100084
Tel: ++86 10 6277 9000
Fax: ++86 10 6277 1150
Eml: sunyl@tsinghua.edu.cn

RUSSIAN FEDERATION

Tatiana T. IVANOVA
Institute of Physics and
Power Engineering (IPPE)
Fiziko-Energiticheskij Institute
1, Bondarenko Square
249033 OBNINSK, Kaluga region
Tel: +7 08439 951 54
Fax: +7 (095) 230 23 26
Eml: abbn@ippe.obninsk.ru

* MATVEENKO, Igor P.
Institute of Physics and
Power Engineering (IPPE)
Fiziko-Energiticheskij Inst.
1, Bondarenko Square
249020 OBNINSK
Tel: +7 08439 98213
Fax: +7(095)2302326 or(095)8833112
Eml: abbn@ippe.obninsk.ru

* TSIBOULIA, Anatoly
Institute of Physics and
Power Engineering (IPPE)
Fiziko-Energiticheskij Inst.
1, Bondarenko Square
249020 OBNINSK
Tel: +7 08439 98938
Fax: +7(095)2302326or(095)8833112 o
Eml: tsib@ippe.obninsk.ru

UNITED KINGDOM

NEWTON, Tim
Serco Assurance
Building A32
Winfrith Technology Centre
DORCHESTER, Dorset,DT2 8DH
Tel: +44 1305 851 195
Fax: +44 1305 851 105
Eml: tim.newton@sercoassurance.com

ROWLANDS, John L.
81 South Court Avenue
DORCHESTER, Dorset, DT1 2DA
Tel: +44 1305 263529
Fax: +44 1305 257641
Eml: Rowlandsjl@aol.com

UNITED STATES OF AMERICA

BRIGGS, J. Blair (Chairman)
Idaho National Laboratory
P.O. Box 1625, MS-3860
2525 North Fremont
IDAHO FALLS, ID 83415-3860
Tel: +1 (208) 526 7628
Fax: +1 (208) 526 2930
Eml: j.briggs@inl.gov

DEAN, Virginia A.F.
Consultant
22 Point Pleasant Place
HC 1 Box 407
Elgin, Arizona 85611-9710
Tel: +1 (520) 455 5378
Fax: +1 (520) 455 0197
Eml: vfdean@aol.com

* GEHIN, Jess C.
Oak Ridge National Laboratory
Bethel Valley Road
P.O.Box 2008
OAK-RIDGE, Tennessee 37831-6172
Tel: +1 865 576 5093
Fax: +1 865 574 9619
Eml: gehinjc@ornl.gov

MCKNIGHT, Richard
Argonne National Laboratory
Nuclear Engineering Division
NE-208
9700 South Cass Avenue
ARGONNE, IL 60439-4842
Tel: +1 (630) 252 6088
Fax: +1 (630) 252 4500
Eml: rdmcknight@anl.gov

NIGG, David W.
Idaho National Laboratory
2525 N. Fremont
P.O. Box 1625, MS 3860
IDAHO FALLS, IB 83415-3860
Tel: +1 208 526 7627
Fax: +1 208 526 2930
Eml: david.nigg@inl.gov

SCOTT, Lori
Cover to Cover
1015 Cedar Hills Blvd.
Belle Vernon, PA 15012
Tel: +1 (724) 930 7975
Fax: +1 (724) 930 7975
Eml: lorisc0tt@aol.com

TAIWO, Temitope
Nuclear Engineering Division NE-208
Argonne National Laboratory
9700 South Cass Avenue
ARGONNE, IL 60439-4842
Tel: +1 630 252 1387
Fax: +1 630 252 4500
Eml: Taiwo@anl.gov

TERRY, William K.
INL
2525 N. Fremont
P.O. Box 1625, MS 3885
IDAHO FALLS, IB 83415-3885
Tel: +1 208 526 7665
Fax: +1 208 526 0528
Eml: william.terry@inl.gov

International Organisations

KIM, Young-In
IAEA
Division of Nuclear Power
Wagramerstr. 5
P.O. Box 100
A-1400 Vienna
Tel: +43 1 2600 22808
Fax: +43 1 2600 22598
Eml: Young-In.Kim@iaea.org

KODELI, Ivo
OECD - NEA Data Bank
Le Seine St Germain
12 boulevard des Iles
F-92130 Issy-les-Moulineaux (France)
Tel: +33 1 45.24.10.74
Fax: +33 1 45.24.11.28
Eml: ivo.kodeli@oecd.org

NA, Byung Chan
OECD Nuclear Energy Agency
Data Bank
12 boulevard des Iles
92130 Issy les Moulineaux
Tel: +33 (0)1 4524 1091
Fax: +33 (0)1 4524 1128
Eml: na@nea.fr

SARTORI, Enrico (Secretary)
OECD/NEA Data Bank
Le Seine-Saint Germain
12 boulevard des Iles
F-92130 ISSY-LES-MOULINEAUX
Tel: +33 1 45 24 10 72 / 78
Fax: +33 1 45 24 11 10 / 28
Eml: sartori@nea.fr

* regret not to have been able to attend

Annex 3

SUMMARY OF EVALUATIONS DISCUSSED AT THE
IRPhEP TECHNICAL REVIEW GROUP MEETING
2-4 November 2005

DIMPLE-LWR-EXP-001 CRIT-BUCK-SPEC-REAC-COEF-RRATE	Hanlon	**ACTION – Hanlon:** Verify that all actions assigned in 2004 are complete. **ACTION – Hanlon:** Ensure that format guide is followed. **ACTION – Hanlon/Scott:** Summary Information form, complete form and return to Scott. Form will be linked. **ACTION – Hanlon/Scott:** Status form, link. **ACTION – Hanlon:** Ensure that in all appropriate sections conclusions are clearly stated or referenced. **ACTION – Hanlon:** Ensure that all tables and figures are numbered by main section where they are included (i.e., Section 1.0 tables/figures would be numbered Table/Figure 1.1, 1.2, 1.3; Section 2.0 tables/figures would be numbered Table/Figure 2.1, 2.2, 2.3, etc.) **ACTION – Hanlon:** Headers and Identification Number, change 'RESR' to 'EXP'. **ACTION – Hanlon:** Page 26, Section 1.2.2, Table 3, include numerical data and make reference to the table in the text. **ACTION – Hanlon:** Page 38, Section 1.3.2, Table 7, remove the last two columns. **ACTION – Hanlon:** Page 38, Section 1.3.2, Table 7, discuss unusually large discrepancy between positions 6D77 and 5E21, for irradiation numbers 1 and 2. **ACTION – Hanlon:** Pages 38 and 39, Section 1.3.2, Tables 7 and 8, if the values given for uncertainties are calculated values, footnote as such. **ACTION – Hanlon:** Page 39, Section 1.3.2, Table 8, 3rd column verify that the values are correct, specifically those that are in extreme positions. **ACTION – Hanlon:** All tables where appropriate, change the 'Notes' below the tables to footnotes for clarity.

		ACTION – Hanlon: Page 39, Section 1.3.2, Table 8, Note 4), state whatever is known about the +/-0.4% value. If the number is arbitrary, it should be stated. **ACTION – Hanlon:** Engineering judgments should be discussed in Section 2.0. **ACTION – Hanlon:** Page 39, Section 1.3.2, Table 8, review Notes 3) and 5) to ensure that they are not redundant. **ACTION – Hanlon:** Follow format guide, adding subsections with fixed titles and contents for Sections 1.2.1 – 1.2.5; 1.3.1 – 1.3.5; etc. **ACTION – Hanlon:** Page 28, Section 1.2.2, Table 4, table shows two cores. Thus on Page 77, Section 2.2, clarify for which core the measurements were performed. Also expand the discussions of uncertainties for clarification. **ACTION – Hanlon:** Page 77, Section 2.3, discuss ratio of F9 to F5. **ACTION – Hanlon:** Page 79, Table 32, Note c), correct the typo referring to Column 7, since there are only 6 columns present. **ACTION – Hanlon:** Page 80, Section 2.3.1.9, explain that data for these measurements are consistent with data for other measurements. **ACTION – Hanlon:** Page 78, Section 2.3, Table 32, move the '+/-' values from the last column and add them to the total uncertainty. **ACTION – Hanlon:** Page 90, Section 3.2, include 3D model, stating that it is the same as that included in the ICSBEP evaluation. **Lori:** Provide link to LEU-COMP-THERM-048. **ACTION – Hanlon:** Page 91, Section 3.2.2, **'2D XY Core Model'** repeat Figure 3 in this section, rather than referencing it. Also refer to Table 36. **ACTION – Hanlon:** Page 93, Section 3.3.5, Table 38, clarify where the values came from. **ACTION – Hanlon:** Page 93, Section 3.3.5, explain the interpretation for the reaction rate ratios. Include information about how to get from the measurement to the benchmark model value.

		ACTION – Hanlon: Page 94, Section 3.7, benchmark values for axial reaction rates should be discussed or referenced, noting that they are indeed benchmark model values. **ACTION – Hanlon:** Page 97, Table 40, note the origin of the axial buckling values. **ACTION – Hanlon:** Page 84, Section 2.7.2, explain how the fine structure measurements were propagated through to the benchmark model specifications and uncertainties, or note that the information is additional and could be used to set up a model. **STATUS:** Complete all action items, including action items assigned in 2004 and 2005. Resolution will be verified by internal and independent reviewer(s). **EVALUATION DUE DATE:** ACTIONS RESOLVED, EVALUATION APPROVED BY REVIEWER(S) AND SUBGROUP (Briggs and McKnight) AND FINAL VERSION RE-SUBMITTED BY **DECEMBER 16, 2005**.
DIMPLE-LWR-EXP-002 CRIT-BUCK-SPEC-REAC-COEF-RRATE Note: Many comments on the DIMPLE evaluation noted above are generic and may apply to this evaluation. Actions noted on this evaluation may also apply to the previous DIMPLE evaluation.	Hanlon	**ACTION – Hanlon:** Resolve all independent reviewer comments. **ACTION – Hanlon:** Page 4, Section 1.0, 2nd paragraph, change text to note that S06C is NOT the subject of this evaluation. **ACTION – Hanlon:** Page 44, Section 1.3 (and elsewhere if applicable), When referencing other evaluations, only Part 1 of the identification number is required. For this evaluation, only DIMPLE-LWR-EXP-001 (part 1) is required to uniquely identify the evaluation. CRIT-BUCK-SPEC-REAC-COEF-RRATE (part 2) is useful information, but is not required. **ACTION – Hanlon:** All X.5 sections, include all coefficient measurements. **ACTION – Hanlon:** It should be stated that the data used to derive the doubling time is not available. **ACTION – Hanlon:** Note which delayed neutron data were used for conversion. Include data for estimated error, if applicable **ACTION – Hanlon:** Page 74, Section 2.2, state which is being used: S06A or S06B. **ACTION – Hanlon:** Page 76, Section 2.5, include uncertainties for ß-eff and delayed neutron data.

		ACTION – Hanlon: Page 83, Section 3.5, Add reactivity Coefficient Measurements. **SUGGESTION – Hanlon:** Page 84, Section 3.7.5, consider repeating Tables 15 and 16. **ACTION – Hanlon:** Page 84, Section 3.7, indicate that only a 2D model is provided. All results should be used. (Please contact Zoltan Szatmary for more explaination.) **ACTION – Hanlon:** Page 86, Section 4.5, provide model and results for measurements or indicate why they are not provided. **ACTION – Hanlon:** Ensure that the measure buckling data is consistent with the benchmark model. **ACTION – Hanlon:** Page 84, Section 2.7.2, explain how the fine structure measurements were propagated through to the benchmark model specifications and uncertainties, or note that the information is additional and could be used to set up a model. **STATUS:** Complete all action items, including action items assigned in 2004 and 2005. Resolution will be verified by internal and independent reviewer(s). **EVALUATION DUE DATE:** ACTIONS RESOLVED, EVALUATION APPROVED BY REVIEWER(S) AND SUBGROUP (Newton, Rolands and Wehmann) AND FINAL VERSION RE-SUBMITTED BY **DECEMBER 16, 2005**
JOYO-LMFR-RESR-001 CRIT-REAC-COEF	Shono	**ACTION – Shono:** Ensure that format guide is followed. **ACTION – Shono/Scott:** Summary form will be linked. **ACTION – Shono/Scott:** Status form, link. **ACTION – Shono:** Ensure that in all appropriate sections conclusions are clearly stated or referenced. **ACTION – Shono:** Resolve comments provided by Ishikawa. **ACTION – Shono:** Ensure that all tables and figures are numbered by main section where they are included (i.e., Section 1.0 tables/figures would be numbered Table/Figure 1.1, 1.2, 1.3; Section 2.0 tables/figures would be numbered Table/Figure 2.1, 2.2, 2.3, etc.) **ACTION – Shono:** Page 6, Section 1.0, provide overview of the facility and all of the measurements.

		SUGGESTION – Shono: Page 6, Section 1.0, consider introducing JAEA. **ACTION – Shono:** After a 3rd level of headings are used (i.e., 1.1.1), rather than using a 4th level, use bold and/or underlined text. **ACTION – Shono:** Provide definition for Pu enrichment. **ACTION – Shono:** Page 14, Table 1.1.2.1-2, 1st column, for 'Pu', use 'Pu weight fraction'. **ACTION – Shono:** Page 14, Table 1.1.2.1-2, 2nd column and associated text, change 'SUS' to 'Stainless Steel'. **ACTION – Shono:** Page 32, Section 1.1.2.2.1, last sentence, reference appropriate section where correction to interaction effects is discussed. **ACTION – Shono:** Page 14, Table 1.1.2.1-2, change 'unit pitch' to 'uniform pitch'. **ACTION – Shono:** Page 23, Figure 1.1.2.1-6, indicate the location of the control rod and the bottom support plate in the figure and in the text. **ACTION – Shono:** Page 36, Section 1.1.3, include the number density data description in this section, rather that referring to Reference 5. **ACTION – Shono:** Page 36, Section 1.1.3, explain why the derivation of atom density uncertainty information is provided in this section. **ACTION – Shono:** Page 36, Tabel 1.1.3-1, in a footnote, parenthetically include the date for when each experiment was performed. **ACTION – Shono:** Page 36, Section 1.1.3, add a brief explanation of the oxygen content as provided by Newton. **ACTION – Shono:** Section 2.0, clearly state, in the conclusion, which data were rejected. **ACTION – Shono:** Page 56, Table 1.5.1-1, note the maximum error value in the inlet and outlet temperature. **ACTION – Shono:** Page 65, include the affect in the uncertainties of 'Mn' in the structural stainless steel material in the appropriate table and in the text .

		ACTION – Shono: Section 2.4, describe the method used to calculate the reactivity data. Include data for the delayed neutron data. **ACTION – Shono:** Page 66, Section 2.1.4, State that it is no longer possible to retrieve the original data used to calculate the homogenized atomic densities. Ensure that any additional uncertainty due to this loss of data is included in the appropriate overall mass or density uncertainty. **ACTION – Shono:** Pages 109 and 110, Tables 3.1.3.2-1 and -2, verify the values given for atomic densities. **SUGGESTION – Shono:** Pages 114 and 115, Tables 2.1.5.1-1 and -2, consider including 25% additional uncertainty due to the analytical modeling. It can also be noted that this method is difficult. **ACTION – Shono:** Page 115, clarify the heterogeneity correction between the 2 models, since the correction between the 64 and the 70 subassembly models is different. **ACTION – Shono:** Page 116, include an estimate of the uncertainty in the correction factors. **ACTION – Shono:** Page 71, address the uncertainty in ß-eff. **ACTION – Shono:** Pages 125 and 130, Tables 3.4.2.5-2 and 3.4.3.5-2, use 2 distinct correction factors for transport and mesh, rather than 1. **ACTION – Shono:** Page 124, Table 3.4.2.5-1, report the uncertainty in absolute value instead of %. **ACTION – Shono:** Table 138, Tables 4.1-1 through 4.1-4, change experimental value to benchmark value. **ACTION – Shono:** Section 4.0, include results for IPPE. **ACTION – Shono:** Page 151, Section 5.0, in this section provide only references for experimental data. Other references should be moved to footnotes at the bottom of the page on which the information or data are referenced. **STATUS:** Complete all action items, including action items assigned in 2004 and 2005. Resolution will be verified by internal and independent reviewer(s).

		EVALUATION DUE DATE: ACTIONS RESOLVED, EVALUATION APPROVED BY REVIEWER(S) AND SUBGROUP (Ivanova) AND FINAL VERSION RE-SUBMITTED BY **DECEMBER 16, 2005**
BFS1-LMFR-RESR-001 CRIT-SPEC-REAC-KIN-RRATE	Tsiboulia	**ACTION – Tsiboulia:** Resolve comments provided by Dean. **ACTION – Tsiboulia:** Ensure that format guide is followed, including adding subsections with fixed titles and contents for Sections 1.2.1 – 1.2.5; 1.3.1 – 1.3.5; etc. **ACTION – Tsiboulia/Scott:** Summary Information form, will be linked. **ACTION – Tsiboulia/Scott:** Status form, complete form and return to Scott, Form will be linked. **ACTION – Tsiboulia:** Ensure that in all appropriate sections conclusions are clearly stated or referenced. **ACTION – Tsiboulia:** Resolve comments provided by Ishikawa. **ACTION – Tsiboulia:** Page 6, Section 1.0, provide overview of the facility and all of the measurements that are being evaluated. **ACTION – Tsiboulia:** Provide Acknowledgements section to include Korean efforts. **ACTION – Tsiboulia:** Page 6, Section 1.1.2.1, include uncertainty in the pitch. **ACTION – Tsiboulia:** Page 8, also include photo from BFS open pamphlet. **ACTION – INL/Tsiboulia:** Improve figure quality. **ACTION – Tsiboulia/Dean:** Resolve with Dean the measurements of the stack height and the height of the individual pellets. **ACTION – Tsiboulia:** Page 16, Table 1.1-1, remove the dot '.' located directly below the +/- symbols in the last 4 rows. **ACTION – Tsiboulia:** Section 1.5 (2.5, 3.5, 4.5), move the data currently listed in Section 1.5 for Coefficient Measurements to Section 1.4 (2.4, 3.4, 4.4) for Reactivity Effects. Change Identifier accordingly. **ACTION – Tsiboulia:** Pages 41 and 42, Table 1.7-1, distinguish between core and blanket.

		ACTION – Tsiboulia: Page 47, Sections 2.3, 2.4, 2.5, 2.7, address uncertainties and provide conclusions. **ACTION – Tsiboulia:** Page 52, Table 3.1-2, verify the value (12.09578) for the Stainless Steel Dowel (T). **ACTION – Tsiboulia:** Page 51, Section 3.1.3, verify how the density was calculated. Discuss in text. **ACTION – Tsiboulia:** Page 58, Table 3.3-3, provide missing data in 3rd column. **ACTION – Tsiboulia:** Add Misawa as an independent reviewer. He will help review equations. **ACTION – Tsiboulia:** Page 61, Section 3.6.5, include and address other uncertainties. **ACTION – Tsiboulia:** Page 50, Figure 3.1-1, ensure colors are distinguishable. **ACTION – Tsiboulia:** Page 60, Table 3.5-1, add footnote suggested by Dean to table. Change 'Nl' to 'NL' in the last column headings in the footnote. **ACTION – Tsiboulia:** Page 66, Section 4.0 tables, remove 'Russian Federation' from the table titles if the calculations are provided by someone other than the author. Indicate who performed the calculations in a footnote and add their country to the table title. **ACTION – Tsiboulia:** Page 66, Section 4.0 tables, recalculate results and provide only reliable, acceptable results. C/E values should be converted to 100(C-E)/E values. Uncertainties should be carried throughout the evaluations. **ACTION – Tsiboulia:** Page 67, Section 4.5 tables, include column showing experimental values. **ACTION – Tsiboulia:** Page 68, Section 4.6 indicate the isotopic ß-eff values used. **ACTION – Tsiboulia:** Page 69, Table 4.7-1, include benchmark values. **ACTION – Tsiboulia:** Page 72, Section 5.0, move code references to footnotes within the text. **ACTION – Tsiboulia:** Section 4.7, Figures 4.7-1 through -4, add axial data.

		ACTION – Tsiboulia/McKnight: Consider if the C/E biases reflect the nature of the oscillating small samples in the assemblies. McKnight will provide references. **STATUS:** Complete all action items, including action items assigned in 2004 and 2005. Resolution will be verified by internal and independent reviewer(s). **EVALUATION DUE DATE:** ACTIONS RESOLVED, EVALUATION APPROVED BY REVIEWER(S) AND SUBGROUP (McKnight, Misawa, and Wehmann) AND FINAL VERSION RE-SUBMITTED BY **DECEMBER 30, 2005**
BFS2-LMFR-RESR-001 CRIT-SPEC-REAC-RRATE *EVALUATION WAS NOT AVAILABLE IN TIME FOR DISCUSSION AT MEETING, BUT WILL BE CONSIDERED FOR PUBLICATION IF COMPLETED, REVIEWED AND APPROVED IN TIME.* Note: Many comments on the BFS1 evaluation noted above are generic and may apply to this evaluation.	Tsiboulia	*The group agreed that a subgroup (Briggs, Ijima, McKnight, and Wehmann) could review the evaluation. The evaluation will be distributed to the technical review group for approval prior to publication.* **ACTION – Tsiboulia:** Send a Word copy of the evaluation to Wehmann immediately after the meeting **ACTION – Wehmann:** Complete Independent Review by December 15, 2005. **STATUS:** Resolution of actions will be verified by internal and independent reviewer(s). **EVALUATION DUE DATE:** ACTIONS RESOLVED, EVALUATION APPROVED BY REVIEWER(S) AND SUBGROUP (Briggs, Ijima, McKnight, and Wehmann) AND FINAL VERSION RE-SUBMITTED BY **DECEMBER 30, 2005**
PFacility-VVER-EXP-001 CRIT-RRATE	Kravchenko	**ACTION – Kravchenko:** Verify that all actions assigned in 2004 are complete. **ACTION – Kravchenko:** Ensure that format guide is followed. **ACTION – Kravchenko/Scott:** Summary Information form will be linked. **ACTION – Kravchenko/Scott:** Status form will be linked. **ACTION – Kravchenko:** Ensure that in all appropriate sections conclusions are clearly stated or referenced. **ACTION – Kravchenko/Scott/Briggs:** Incorporate the Criticality information by reference.

		ACTION – Kravchenko: Ensure that all tables and figures are numbered by main section where they are included (i.e., Section 1.0 tables/figures would be numbered Table/Figure 1.1, 1.2, 1.3; Section 2.0 tables/figures would be numbered Table/Figure 2.1, 2.2, 2.3, etc.) **ACTION – Kravchenko/Scott:** Headers and Identification Number, change 'RESR' to 'EXP'. **ACTION – Kravchenko:** Resolve independent review comments. **ACTION – Kravchenko:** Page 5, Section 1.0, provide overview of the facility and all of the measurements. **ACTION – Kravchenko:** Page 19, Table 4, describe how the uncertainties were derived. **ACTION – Kravchenko:** Page 9, Figure 2, verify the geometric data in the upper part of the fuel rod. The dimension of '23' might need to be changed to '24'. **ACTION – Kravchenko:** If data have not been evaluated, a model should not be presented in Section 3.0, but rather in an appendix. In this case, Section 4.0 results should also be moved to an appendix. **ACTION – Kravchenko:** Page 41, Table 13, provide missing data in 3rd column. **ACTION – Kravchenko:** Only critical configuration data will be published at this time. All other modeling and calculation information, regarding Reaction Rate information, should be moved to an appendix. **STATUS:** Complete all action items, including action items assigned in 2004 and 2005. Resolution will be verified by internal and independent reviewer(s). **EVALUATION DUE DATE:** ACTIONS RESOLVED, EVALUATION APPROVED BY REVIEWER(S) AND SUBGROUP (if applicable) AND FINAL VERSION RE-SUBMITTED BY **NOVEMBER 30, 2005**
ZR6-VVER-EXP-001 CRIT-BUCK-SPEC-REAC-COEF-RRATE	Szatmáry	**ACTION – Szatmáry:** Verify that all actions assigned in 2004 are complete. **ACTION – Szatmáry:** Ensure that format guide is followed. **ACTION – Szatmáry/Scott:** Summary Information form, complete form and return to Scott. Form will be linked.

		ACTION – Szatmáry/Scott: Status form, complete form and return to Scott. Form will be linked. **ACTION – Szatmáry:** Ensure that in all appropriate sections conclusions are clearly stated or referenced. **ACTION – Szatmary/Scott/Briggs:** Incorporate the Criticality information by reference. **ACTION – Szatmáry:** Ensure that all tables and figures are numbered by main section where they are included (i.e., Section 1.0 tables/figures would be numbered Table/Figure 1.1, 1.2, 1.3; Section 2.0 tables/figures would be numbered Table/Figure 2.1, 2.2, 2.3, etc.) **ACTION – Szatmáry/Scott:** Headers and Identification Number, change 'RESR' to 'EXP'. **ACTION – Szatmáry:** Page 6, Section 1.0, provide overview of the facility and all of the measurements. **ACTION – Szatmáry:** Page 36, Figure 1.11, add dimensions. **ACTION – Scott:** Don't change courier fonts in Tables. **ACTION – Szatmáry:** Sensitivity analysis action item from 2004 will be postphoned. A statement should be added to appropriate sections indicating that the analyses have not been completed. Data currently included in Sections 3.2 and 3.3 and in 4.2 and 4.3 should be moved to an appendix. **ACTION – Szatmáry:** Sections 2.2, 2.3, 2.4, 2.5, and 2.7, attempt to derive estimated uncertainties for measurements. **ACTION – Szatmáry:** Page 122, Sections 2.4 and 2.5, include delayed neutron data. **ACTION – Szatmáry:** Page 133, Section 2.11, move data to an appendix. **ACTION – Szatmáry:** Page 191, Section 4.4, indicate that reactivity effects were not calculated. **ACTION – Szatmáry:** Page 188, Section 4.3, add 100(C-E)/E values. **ACTION – Szatmáry:** Page 214, Section 5.0, move References 9, 10 and 12 to footnotes within the text.

		ACTION – Szatmáry: Provide complete description of model in all appropriate sections. For Sections 3.2 through 3.10, provide sufficient information so that the user will not have to make assumptions about what the model looks like or at what location the measurements were made. **ACTION – Szatmáry/Scott:** Title page, indicate that Virginia and Taiwo reviewed only the criticality portions and that Wehmann reviewed the rest of the evaluation. **ACTION – Szatmáry:** Page 151, Table 3.1.a, ensure that the units are correct. **STATUS:** Complete all action items, including action items assigned in 2004 and 2005. Resolution will be verified by internal and independent reviewer(s). **EVALUATION DUE DATE:** ACTIONS RESOLVED, EVALUATION APPROVED BY REVIEWER(S) AND SUBGROUP (Dean) AND FINAL VERSION RE-SUBMITTED BY **JANUARY 2, 2006**
ZPPR-LMFR-RESR-001 CRIT-SPEC-REAC-RRATE	Ishikawa	**ACTION – Ishikawa:** Ensure that format guide is followed. **ACTION – Ishikawa/Scott:** Summary Information form will be linked. **ACTION – Ishikawa/Scott:** Status form will be linked. **ACTION – Ishikawa:** Ensure that in all appropriate sections conclusions are clearly stated or referenced. **ACTION – Ishikawa:** Address independent review comments to the extent possible. **ACTION – Ishikawa:** Ensure that all tables and figures are numbered by main section where they are included (i.e., Section 1.0 tables/figures would be numbered Table/Figure 1.1, 1.2, 1.3; Section 2.0 tables/figures would be numbered Table/Figure 2.1, 2.2, 2.3, etc.) **ACTION – Ishikawa:** Page 14, Section 1.0, provide overview of the facility and all of the measurements. **ACTION – Ishikawa:** Ensure that figures and tables follow (not precede) the text where they are referenced. **ACTION – McKnight:** Attempt to locate the logbook containing temperature data. **ACTION – ANL/INL:** Verify if individual spreadsheet tables can be released.

		ACTION – Ishikawa: Section 1.7, describe measurements in this section, rather than referring to Section 1.3. **ACTION – Ishikawa:** Provide estimation of gap the uncertainties in the gap. **ACTION – Ivanova:** Determine if Rozhikhin can provide a review. **ACTION – Ishikawa:** Section 3.7, include data. **SUGGESTION – Ishikawa:** If possible have figures and tables redrawn or typed so the quality can be improved and made consistent with other evaluations. **ACTION – Briggs/McKnight:** Obtain release of ADEN library table. **STATUS:** *Evaluation approved as a draft.* Complete all action items, including action items assigned in 2004 and 2005 and obtain independent review by 31 July 2006. Resolution will be verified by internal and independent reviewer(s). **EVALUATION DUE DATE:** ACTIONS RESOLVED, EVALUATION APPROVED BY REVIEWER(S) AND SUBGROUP (if applicable) AND FINAL VERSION RE-SUBMITTED BY **JANUARY 20, 2006**
HTR10-GCR-RESR-001 CRIT-REAC	Terry	**ACTION – Terry:** Ensure that format guide is followed. **ACTION – Terry/Scott:** Summary Information form, complete form and return to Scott. Form will be linked. **ACTION – Terry/Scott:** Status form, complete form and return to Scott. Form will be linked. **ACTION – Terry:** Ensure that in all appropriate sections conclusions are clearly stated or referenced. **ACTION – Terry:** Ensure that all tables and figures are numbered by main section where they are included (i.e., Section 1.0 tables/figures would be numbered Table/Figure 1.1, 1.2, 1.3; Section 2.0 tables/figures would be numbered Table/Figure 2.1, 2.2, 2.3, etc.) **ACTION – Terry:** Page 6, Section 1.1, re-describe the actual experiment. **ACTION – Terry:** Change ‘helium flow channel’ to ‘coolant flow channel’ throughout, where appropriate in the text and in the figures.

		ACTION – Terry: Page 9, Table 2, define all materials. **ACTION – Terry:** Use consistent terminology (i.e., fuel pebble vs. fuel particle). **ACTION – Terry:** Page 6, Section 1.0, ensure that how criticality as determined is clearly described. **ACTION – Terry:** Remove mention of region numbers in text, where appropriate. **ACTION – Terry:** Page 13, Figure 4, note that channels are equally spaced. **ACTION – Terry:** Add the bias in the uncertainty in the shape of the upper surface of the core. **ACTION – Terry:** Attempt to gather information regarding possible gaps between the graphite blocks. **ACTION – Terry:** Ask Professor Sun if the errors in the radii should be assumed as systematic or if a combination of systematic and random errors (or deterministic uncertainty) should be used. **ACTION – Terry:** Change 'conservative' to 'bounding', where applicable. **ACTION – Terry:** Ask Professor Sun for additional impurity information. **ACTION – Terry:** Address Nigg's comment on mathematical notation. **ACTION – Terry:** Page 39, Table 8, add sensitivity to each parameter. **ACTION – Terry:** Ask Professor Sun for additional atom density information, or present current vs. previous atom density information in a table in an appendix, noting how they were calculated. **ACTION – Terry:** Discuss observed values for densities for fuel and pellets. **SUGGESTION – Terry:** Consider using mid-range of the observed range, rather than normal values. **ACTION – Terry:** Appendix B, use standard numbers for Avogadro's number and atomic weights, or provide what was used.

		ACTION – Terry: The model should not be referenced as a COMBINE model. **ACTION – Terry:** Add a sketch of the fuel sphere and particle details. **ACTION – Terry:** Page 59, Section 3.1.5, provide a table showing the benchmark model k-eff and the uncertainty for each of the three models. **ACTION – Terry:** Page 59, Section 3.4, if the control rods have not been evaluated, the information in this section should be removed or moved to an appendix. **ACTION – Terry:** Process the cross sections based on the size of the particles and discuss in the description of the model. **STATUS:** Complete all action items, including action items assigned in 2004 and 2005. Resolution will be verified by internal and independent reviewer(s). **EVALUATION DUE DATE:** ACTIONS RESOLVED, EVALUATION APPROVED BY REVIEWER(S) AND SUBGROUP (Dean and Nigg) AND FINAL VERSION RE-SUBMITTED BY **JANUARY 13, 2006**
VENUS-PWR-EXP-001 BUCK-RRATE-POWDIS	Moon	**ACTION – Moon:** Ensure that format guide is followed. **ACTION – Moon/Scott:** Summary Information form, complete form and return to Scott. Form will be linked. **ACTION – Moon/Scott:** Status form will be linked. **ACTION – Moon:** Ensure that in all appropriate sections conclusions are clearly stated or referenced. **ACTION – Moon:** Resolve comments made by Tchistiakov and other independent reviewers. **ACTION – Moon:** Ensure that all tables and figures are numbered by main section where they are included (i.e., Section 1.0 tables/figures would be numbered Table/Figure 1.1, 1.2, 1.3; Section 2.0 tables/figures would be numbered Table/Figure 2.1, 2.2, 2.3, etc.) **ACTION – Moon/Scott:** Headers and Identification Number, change 'RESR' to 'EXP' and remove 'CRIT'. **ACTION – Moon:** Evaluation ID will be changed to 001. **ACTION – Moon:** Page 7, Section 1.0, spell out 'SCK-CEN' for the first use.

		ACTION – Moon: Page 11, Section 1.1.2.3.x, define symbols. **ACTION – Moon:** After a 3rd level of headings are used (i.e., 1.1.1), rather than using a 4th level, use bold and/or underlined text. **ACTION – Moon:** Figures and tables should follow text. **ACTION – Moon:** Page 18, Section 1.1.3.12, explain the meaning of 'not qualified'. **ACTION – Moon:** Page 10, expand discussion on the exact geometrical layout. Add drawings, as well. **ACTION – Moon:** Section 1.1.3, use uncertainty, rather than error. **ACTION – Moon:** Page 23, Section 1.8.2, adjust to 1σ. **ACTION – Moon:** Modeling should not be discussed in Section 1.0. A sketch can be included, but not of the model. **ACTION – Moon:** Page 40, Section 2.1, state that measurement of criticality is unacceptable as benchmark experiments. **ACTION – Moon:** Page 41, Sections 2.2, 2.7 and 2.8, arrive at a total uncertainty and discuss justification. **ACTION – Moon:** Determine if there is an uncertainty in the amount of the fuel and pitch. If so, determine and discuss in the text. **ACTION – Moon/Kodeli:** Measurement techniques for all types should be clearly and completely described in Section 1.0 and evaluated in Section 2.0. Uncertainties should be estimated, justified and reported. Kodeli can help with this. **ACTION – Moon:** Section 3.0, benchmark model specifications should include sketches of the model. Sketches from Section 1.0 can be repeated in Section 3.0. **ACTION – Moon:** Model of the Critical configuration should be included in an appendix for preservation purposes. **ACTION – Moon:** Page 49, Table 3-1, explain how atom densities were obtained. **ACTION – Moon:** Page 82, Section 5.0, references made to codes should be moved to footnotes within the text.

		STATUS: *Evaluation approved as a draft.* Complete all action items, including action items assigned in 2004 and 2005 and obtain independent review by 31 July 2006. Resolution will be verified by internal and independent reviewer(s). **EVALUATION DUE DATE:** ACTIONS RESOLVED, EVALUATION APPROVED BY REVIEWER(S) AND SUBGROUP (if applicable) AND FINAL VERSION RE-SUBMITTED BY **JANUARY 20, 2006**
VENUS-PWR-EXP-003 RRATE-POWDIS Note: Many comments on the VENUS evaluation noted above are generic and may apply to this evaluation.	Moon	**ACTION – Moon:** Page 7, Section 1.1.1, define 'lead factor' in a footnote. **ACTION – Moon:** Page 49, Section 3.0, atom densities should be reported to 4 significant digits. **STATUS:** *Evaluation approved as a draft.* Complete all action items, including action items assigned in 2004 and 2005 and obtain independent review by 31 July 2006. Resolution will be verified by internal and independent reviewer(s). **EVALUATION DUE DATE:** ACTIONS RESOLVED, EVALUATION APPROVED BY REVIEWER(S) AND SUBGROUP (if applicable) AND FINAL VERSION RE-SUBMITTED BY **JANUARY 20, 2006**
VENUS-PWR-EXP-002 CRIT-BUCK-RRATE-POWDIS Note: Many comments on the VENUS evaluations noted above are generic and may apply to this evaluation.	Na	**ACTION – Na:** Evaluation ID will be changed to 002. **ACTION – Na:** Verify that all actions assigned in 2004 are complete. **ACTION – Na:** Ensure that format guide is followed. **ACTION – Na/Scott:** Summary Information form, complete form and return to Scott. Form will be linked. **ACTION – Na/Scott:** Status form will be linked. **ACTION – Na:** Ensure that in all appropriate sections conclusions are clearly stated or referenced. **ACTION – Na:** Evaluation must undergo internal review. An internal reviewer must be identified. **ACTION – Na/INL:** Resolve problem with missing figures. **ACTION – Na:** Add Section 1.1.4 for temperature data, renumbering current 1.1.4 to 1.1.5. **ACTION – Na:** Page 31, Section 1.2, describe methods and details of how the measurements were made. Provide results.

		ACTION – Na: Page 26, Table 1-3, verify zero ('0') values for fuel isotopic composition in 233U/U and 238Pu/Pu. If the values are indeed zero, remove entries. **ACTION – Na:** Page 31, Section 1.2, report B^2. **ACTION – Na:** Page 41, Section 1.7.1, explain that the detectors were calibrated in fission spectrum (instead of saying fission flux). If this is not the case, remove statement. Clarify how the experiments were performed. **ACTION – Na:** Section 1.7.1, complete tables with no entries. **ACTION – Na:** Page 53, Section 1.8.3.1, move to Section 2.0. **ACTION – Na:** Page 59, Sections 2.1 and 2.2, state that these data have not yet been evaluated. **ACTION – Na:** Benchmark model specifications currently discussed in Section 3.0 and results currently reported in Section 4.0, should be moved to an appendix. **ACTION – Na:** Page 60, Section 2.7, provide adequate information. If reaction rate has not been evaluated, consider publishing by the working party, rather than by the IRPhEP. **STATUS:** *Evaluation approved as a draft.* Complete all action items, including action items assigned in 2004 and 2005 and obtain independent review by 31 July 2006. . Resolution will be verified by internal and independent reviewer(s). **EVALUATION DUE DATE:** ACTIONS RESOLVED, EVALUATION APPROVED BY REVIEWER(S) AND SUBGROUP (if applicable) AND FINAL VERSION RE-SUBMITTED BY **JANUARY 20, 2006**
ZEBRA-LMFR-RESR-001 CRIT-SPEC-REAC-COEF-RRATE	Rowlands	**ACTION – Rowlands:** Verify that all actions assigned in 2004 are complete. **ACTION – Rowlands:** Ensure that format guide is followed. **ACTION – Rowlands/Scott:** Summary Information form will be linked. **ACTION – Rowlands/Scott:** Status form, complete form and return to Scott. Form will be linked. **ACTION – Rowlands:** Ensure that in all appropriate sections conclusions are clearly stated or referenced.

		ACTION – Rowlands: Ensure that all tables and figures are numbered by main section where they are included (i.e., Section 1.0 tables/figures would be numbered Table/Figure 1.1, 1.2, 1.3; Section 2.0 tables/figures would be numbered Table/Figure 2.1, 2.2, 2.3, etc.) **ACTION – Rowlands:** Cover page, add Peter Smith as internal reviewer and Ishikawa as independent reviewer. List Nakagawa as an independent reviewer. Remove Zukeran **ACTION – Rowlands:** Resolve Ishikawa comments. **ACTION – Rowlands:** Benchmark Model specifications and sample results should not be provided for unevaluated data. This information should be moved to an appendix. **ACTION – Rowlands:** Tables should be put in the standard format. **ACTION – Rowlands/INL:** Enlarge figures. **ACTION – Rowlands:** Repeat figures from Section 3.0 in Section 1.0, rather than referencing them. **ACTION – Rowlands:** Move data description and results from Section 2.0 to Section 1.0. **ACTION – Rowlands:** Page 36, Section 1.6, provide additional description. **ACTION – Rowlands:** Verify if evaluation identifier should include 'KIN' and/or 'ISO'. **ACTION – Rowlands:** Page 36, Section 1.10, move data to criticality section. **ACTION – Rowlands:** Expand the uncertainty analysis. **ACTION – Rowlands:** Page 39, Table 2.1, for clarity, add a few rows for presenting the experimental uncertainty, in addition to discussing the uncertainty in the text. **ACTION – Rowlands:** Page 41, Section 2.3, explain the discrepancies in the given data. **ACTION – Rowlands:** Page 49, Sections 2.5 and 2.6, provide the document number for 'ZTN'. Move data to Section 1.0. Data can also be used in Section 3.0. **ACTION – Rowlands:** Evaluation identifier may need to be changed after evaluation is revised.

		ACTION – Rowlands: Correct unit headings in atom density tables (i.e., 'atoms/barn cm2 => atoms/barn cm). **ACTION – Rowlands:** Move control rod information in Section 3.1.4, to Section 3.4. **ACTION – Rowlands:** Summarize benchmark model values for each model. **ACTION – Rowlands:** Section 3.3, complete section. **ACTION – Rowlands:** Page 141, Table 4.1.1, discuss observed discrepancies in the 4 rows presenting 'Pin' and 'Plate' information. **ACTION – Rowlands:** Section 3.4, complete section. Use 100(C-E)/E data to obtain results. **ACTION – Rowlands:** Section 4.0, indicate whether or not measurements were not made and if they were unacceptable. **ACTION – Rowlands:** Page 153, Section 5.0, formally reference ZEBRA CD-ROM data or footnote that the data can be accessed from the NEA databank. **ACTION – Rowlands/Scott:** A folder containing ZEBRA documents will be included on the IRPhEP DVD. **STATUS:** *Evaluation approved as a draft.* Complete all action items, including action items assigned in 2004 and 2005. Resolution will be verified by internal and independent reviewer(s) by July. **EVALUATION DUE DATE:** ACTIONS RESOLVED, EVALUATION APPROVED BY REVIEWER(S) AND SUBGROUP (if applicable) AND FINAL VERSION RE-SUBMITTED BY **JANUARY 20, 2006**
ZEBRA-LMFR-RESR-002 CRIT-BUCK-REAC-RRATE Note: Many comments on the ZEBRA evaluation noted above are generic and may apply to this evaluation.	Rowlands	**ACTION – Rowlands:** Cover page, remove Newton as an independent reviewer. Note that Zukeran is an internal reviewer. **ACTION – Rowlands:** Evaluative statements should be made in Section 2.0, not in Section 1.0. The word 'model' should not be used in Section 1.0. **ACTION – Rowlands:** Page 29, Table 2.1.2, show position of loading in a figure. Also explain why the radius is shown in terms of '√'. **ACTION – Rowlands:** Ensure that the term 'standard centimeters' is defined at the first use in the evaluation.

		ACTION – Rowlands: Section 2.0 tables, change 'error' in the last columns to 'uncertainty'. **ACTION – Rowlands:** Tables on pages 144 and 145, and others, where appropriate, remove columns for 'Material No.' data. **ACTION – Rowlands:** Ensure all appropriate sections are completed. **ACTION – Rowlands:** Pages 148 and 149, figures should be presented in Section 1.0, rather than in Section 3.0. **ACTION – Rowlands:** Section 4.0, Provide values as 100(C-E)/E. **STATUS:** *Evaluation approved as a draft.* Complete all action items and obtain independent review by 31 July 2006. Resolution will be verified by internal and independent reviewer(s). **EVALUATION DUE DATE:** ACTIONS RESOLVED, EVALUATION APPROVED BY REVIEWER(S) AND SUBGROUP (if applicable) AND FINAL VERSION RE-SUBMITTED BY **JANUARY 20, 2006**
ZEBRA-LMFR-RESR-003 CRIT-REAC-RRATE Note: Many comments on the ZEBRA evaluations noted above are generic and may apply to this evaluation.	Rowlands	**ACTION – Rowlands:** Cover page, note that Zukeran is the internal reviewer and not the independent reviewer. Also add Nakagawa as the independent reviewer. **ACTION – Rowlands:** Section 2.0, experimental results should be moved to Section 1.0. **ACTION – Rowlands:** Section 2.0 tables, clarify excess reactivity in terms of cm. **STATUS:** *Evaluation approved as a draft.* Complete all action items and obtain independent review by 31 July 2006. Resolution will be verified by internal and independent reviewer(s) by July. **EVALUATION DUE DATE:** ACTIONS RESOLVED, EVALUATION APPROVED BY REVIEWER(S) AND SUBGROUP (if applicable) AND FINAL VERSION RE-SUBMITTED BY **JANUARY 20, 2006**
DCA-HWR-EXP-001 CRIT-SPEC-RRATE	Hazama	**ACTION – Hazama:** Ensure that format guide is followed. **ACTION – Hazama/Scott:** Summary Information form will be linked. **ACTION – Hazama/Scott:** Status form will be linked.

		ACTION – Hazama: Ensure that in all appropriate sections conclusions are clearly stated or referenced. **ACTION – Hazama:** Ensure that all tables and figures are numbered by main section where they are included (i.e., Section 1.0 tables/figures would be numbered Table/Figure 1.1, 1.2, 1.3; Section 2.0 tables/figures would be numbered Table/Figure 2.1, 2.2, 2.3, etc.) **ACTION – Hazama:** Headers and Identification Number, change 'RESR' to 'EXP'. **ACTION – Hazama:** Page 9, Section 1.1.2, move reference to the ICSBEP Uncertainty Guide to a footnote. **ACTION –INL:** Improve figure quality. **ACTION –INL:** Page 18, Figure 1.10, change 'Φ' to 'O.D.' **ACTION – Hazama:** Page 24, use of the word 'evaluated' in Section 1.0 should be avoided. Change 'evaluated' to 'determined', where applicable. **ACTION – Hazama:** Evaluated data should be moved to Section 2.0. **ACTION – Hazama:** Pages 21, 22 and 23, Tables 1.1, 1.2 and 1.3, define in a footnote below the table the terms 'spec' and 'ana'.. **ACTION – Hazama:** Page 24, Table 1.4, confirm and explain the meaning of UO_2. Also better define the meaning of the '+/-' values. Confirm if the standard deviation in uranium content applies to the average of all fuel or element by element. Also indicate if the data are tolerances or 1σ values. **ACTION – Hazama:** Pages 58 and 59, Section 5.0, non-experimental reference should be moved to footnotes within the text. **ACTION – Hazama:** Sections not containing data should indicate that measurements were either not performed or not available, rather than indicating 'NA'. **ACTION – Hazama:** Page 24, Section 1.1.3, verify if 'fission ratio' should be changed to 'capture ratio'. **ACTION – Hazama:** Page 35, Table 1.13, heading, change 'error' to 'uncertainty'. Also confirm if the values are experimental values.

		ACTION – Hazama: Page 38, Table 2.2, verify if the values are scaled correctly. **ACTION – Hazama:** Page 38, Tables 2.1 – 2.3, last column, clarify, in a footnote, the meaning of the '%' values within parentheses or consider omitting them if appropriate. **ACTION – Hazama:** Page 53, Table 4.1, add another table or a new column to include 100(C-E)/E values. **STATUS:** Complete all action items. Resolution will be verified by internal and independent reviewer(s). **EVALUATION DUE DATE:** ACTIONS RESOLVED, EVALUATION APPROVED BY REVIEWER(S) AND SUBGROUP (if applicable) AND FINAL VERSION RE-SUBMITTED BY **DECEMBER 16, 2005**
CROCUS-LWR-RESR-001 CRIT-REAC-KIN	Sartori	**ACTION – Authors:** Verify that all actions assigned in 2004 are complete. **ACTION – Authors:** Ensure that format guide is followed. **ACTION – Authors/Scott:** Summary Information form will be linked. **ACTION – Authors/Scott:** Status form should be completed and submitted to Scott. Form will be linked. **ACTION – Authors:** Ensure that in all appropriate sections conclusions are clearly stated or referenced. **ACTION – Authors:** Ensure that all tables and figures are numbered by main section where they are included (i.e., Section 1.0 tables/figures would be numbered Table/Figure 1.1, 1.2, 1.3; Section 2.0 tables/figures would be numbered Table/Figure 2.1, 2.2, 2.3, etc.) **ACTION – Authors:** Page 6, Section 1.0, provide overview of the facility and all of the measurements. **ACTION – Authors:** Page 6, Section 1.1.1, move summary information to Section 1.1. **ACTION – Authors:** Page 7, determine if uncertainties, including material specifications, are available. If so, provide tables and figures. If not, it should be so stated. **ACTION – Authors:** Page 15, Figure 9, move modeling information to Section 3.0. Add dimensions to figures. Figure showing HELIOS model information should be moved to an appendix.

		ACTION – Authors: Page 16, Section 1.1.3, reword for clarity. State if ^{235}U is a powder. **ACTION – Authors:** Page 16, Table 1, clarify if the values are measured densities. **ACTION – Authors:** Page 16, Section 1.1.4, note if there is an uncertainty in the temperature. Include an additional significant digit. **ACTION – Authors:** All figures, add figure numbers and captions, according to guidelines. **ACTION – Authors:** Page 20, table and figure, clarify where the values came from and note the directly measured parameter. **ACTION – Authors:** Page 19, 1st paragraph, define 'cte'. **ACTION – Authors:** Page 22, 1st figure, define 'time'. Include numbers on scale for x/y axis. **ACTION – Authors:** Page 23, Section 2.1, clarify the precise water level. **ACTION – Authors:** Section 2.1 and 2.6, evaluation of the uncertainty analysis needs to be completed in much more detail. 'Errors' should be changed to 'uncertainties'. **ACTION – Authors:** Section 2.4, since reactivity effects data have not yet been completed, modeling in Section 3.0 and results in Section 4.0 (4.6.3) should be moved to an appendix. **ACTION – Authors:** Section 3.1 and 3.6, provide 3D model. Also axial buckling should be determined by either 3D Monte Carlo or 3D deterministic calculations. Provide any bias information resulting from simplifications. Explain how to translate from the model to the experiment. **ACTION – Authors:** Section 4.0 Provide 100(C-E)/E. **ACTION – Authors:** Section 3.0, provide benchmark values and their uncertainties. **ACTION – Authors:** Tables on pages 29 and 30, provide statistical uncertainties for all Monte Carlo results. **ACTION – Authors:** Clarify the derivation of spectrum, averaging the 6-group data. **ACTION – Authors:** Page 28, specify data libraries in addition to the codes.

		ACTION – Authors: Indicate which lamda is used in conversion to reactivity. **STATUS:** *Evaluation approved as a draft.* Complete all action items and obtain independent review by 31 July 2006 Resolution will be verified by internal and independent reviewer(s). **EVALUATION DUE DATE:** ACTIONS RESOLVED, EVALUATION APPROVED BY REVIEWER(S) AND SUBGROUP (if applicable) AND FINAL VERSION RE-SUBMITTED BY **JANUARY 20, 2006**

Annex 4

STATUS OF ADDITIONAL EVALUATIONS
CURRENTLY IN PROGRESS OR PLANNED AND/OR ARCHIVED AND POTENTIALLY AVAILABLE FOR EVALUATION

Evaluations for First Edition

1. DIMPLE-LWR-EXP-001 CRIT-BUCK-SPEC-REAC-COEF-RRATE (LEU-COMP-THERM-048) - Light Water Moderated and Reflected Low Enriched Uranium (3 wt.% ^{235}U) Dioxide Rod Lattices DIMPLE S01
2. DIMPLE-LWR-EXP-002 CRIT-BUCK-SPEC-REAC-COEF-RRATE (LEU-COMP-THERM-055) Light Water Moderated and Reflected Low Enriched Uranium (3 wt.% ^{235}U) Dioxide Rod Lattices DIMPLE S06
3. ZR6-VVER-EXP-001 CRIT-BUCK-SPEC-REAC-COEF-RRATE - The VVER Experiments: Regular and Perturbed Hexagonal Lattices of Low-Enriched UO_2 Fuel Rods in Light Water
4. PFACILITY-VVER-EXP-001 CRIT-RRATE (LEU-COMP-THERM-061) - VVER Physics Experiments: Hexagonal (1.27-vm Pitch) Lattices of U(4.4 wt.% ^{235}U)O_2 Fuel Rods In Light Water, Perturbed by Boron, Hafnium, or Dysprosium Absorber Rods, or by Water Gap With/Without Aluminium Tubes
5. ZEBRA-LMFR-RESR-001 CRIT-SPEC-REAC-COEF-RRATE - Fast Critical Experiments in Plate and Pin Geometry Form. The ZEBRA CADENZA Cores, Assemblies 22, 23, 24 and 25.
6. ZEBRA-LMFR-RESR-002 CRIT-BUCK-REAC-RRATE - The ZEBRA MOZART Programme. Part 1. MZA and MZB. ZEBRA Assemblies 11 and 12
7. ZEBRA-LMFR-RESR-003 CRIT-REAC-RRATE - The ZEBRA MOZART Programme. Part 2. MZC and the Control Rod Studies - ZEBRA Assembly 12
8. CROCUS-LWR-RESR-001 CRIT-REAC-KIN - Kinetic Parameters and Reactivity Effect Experiments in CROCUS
9. VENUS-PWR-EXP-001 BUCK-RRATE-POWDIS - VENUS-1 PWR UO_2 Core 2-Dimensional Benchmark Experiment
10. VENUS-PWR-EXP-002 CRIT-BUCK-RRATE-POWDIS - VENUS-2 PWR MOX Core Measurements
11. VENUS-PWR-EXP-003 RRATE-POWDIS - VENUS-3 PWR UO_2 Core 3-Dimensional Benchmark Experiment
12. ZPPR-LMFR-RESR-001 CRIT-SPEC-REAC-RRATE - JNC Large fast reactor experiment ZPPR-10A in JUPITER
13. JOYO-LMFR-RESR-001 CRIT-REAC-COEF - JNC Experimental Fast Reactor JOYO Mk-I core physics tests
14. DCA-HWR-EXP-001 CRIT-SPEC-RRATE - JNC Heavy water core critical experiment, DCA
15. BFS1-LMFR-RESR-001 CRIT-SPEC-REAC-KIN-RRATE - BFS-73 Experiment: Benchmark of a Fast Reactor Core With Metal Uranium Fuel of 18.5% Average Enrichment (KALIMER Uranium Sosium Core) - A 650 MWe-Class Sodium-Cooled MOX-Fueled FBR Core Mock-up Critical Experiment With Two-Homogeneous Zones and Control-Rod Withdrawal
16. BFS2-LMFR-RESR-001 CRIT-SPEC-REAC-RRATE BFS-62-3A Experiment: Fast Reactor Core with U-Pu Fuel and Stainless Steel Reflector
17. HTTR-10-GCR-RESR-001 CRIT-REAC - Evaluation of the Initial Critical Configuration of the HTR-10 Pebble-bed Reactor

Evaluations requiring further work or final review:

1. IPEN/MB01-RESR-EXP-001 COEF - The Inversion Point of the Isothermal Reactivity Coefficient of the IPEN/MB-01 Reactor
2. VENUS-PWR-EXP-004 CRIT-BUCK-REAC-KIN-RRATE - Experimental Study of the VENUS Configuration No. 7
3. VHTRC-GCR-EXP-001 CRIT-COEF - VHTRC Temperature Coefficient Benchmark
4. TCA-LWR-EXP-001 CRIT-COEF - TER-2 in LWR UO_2 with Soluble Poisons
5. STEK-LMFR-EXP-001 CRIT-SPEC-REAC-RRATE - Reactivity Worth Measurements and Other Experiments in the Critical Facility STEK
6. KRITZ-PWR-EXP-001 CRIT-BUCK-REAC-RRATE KRITZ-2:19 Experiment on Regular H_2O/Fuel Pin Lattices with Mixed Oxide Fuel at Temperatures up to $245^{O}C$
7. ZEBRA-RESR-EXP-001-CRIT-SPEC-RRATE - K-Infinity Experiments In Fast/Intermediate Neutron Spectra for Various Fissile Materials - ZEBRA Core 8

Evaluations requiring considerable more work before approval:

1. SNEAK-LMFR-EXP-001 CRIT-SPEC-REAC-RRATE SNEAK-7 - A&B Pu-fuelled fast critical assemblies in the Karlsruhe Fast Critical Facility
2. SNEAC-9C - Experimental Series of SNR 300 Specific Criticals
3. PROTEUS-GCR-EXP-001 CRIT-SPEC-REAC-RRATE - Shut-down Rod Worths in LEU-HTR Configurations
4. TCA-LWR-EXP-001 CRIT-COEF - TER-2 in LWR UO_2 with Soluble Poisons
5. VENUS-PWR-EXP-005 CRIT-SPEC-POWDIS - Experimental Study of the VENUS Configuration No. 9
6. VENUS-PWR-EXP-006 CRIT-BUCK-SPEC-REAC-POWDIS - Experimental Study of the VENUS Configuration No. 17
7. ASTRA-HTGR-EXP-001-CRIT-REAC-RRATE - ASTRA Critical Facility Experiments
8. HTTR-GCR-RESR-001 CRIT-REAC-COEF-POWDIS - Initial Criticality, Control Rod Position at Criticality, Excess Reactivity, Scram Reactivity of HTTR reactor

Experiments proposed for inclusion in IRPhE

1. RRR/SEG-LMFR-EXP-001- CRIT-SPEC-REAC-RRATE - Sample Reactivity Measurements in the Rossendorf SEG Configurations
2. B&WSSCR-PWR-RESR-001 CRIT-SPEC-REAC - B&W-SSCR, Spectral Shift Reactor Lattice Experiments
3. BERENICE - Investigations of the delayed neutron fraction in MASURCA
4. CREOLE - Temperature coefficient of UOX and MOX up to 300 deg. C in EOLE
5. RACINE - Fast reactor experiments in support of Phenix
6. ZPPR-9 experiment: 600 MWe class, two-region homogeneous clean core: one feature is the measurement of the sample Doppler reactivity in JUPITER.
7. ZPPR-13A: 650 MWe class, radially-heterogeneous clean core in JUPITER: very weak core-coupling - difficult from the reactor physics viewpoint.
8. ZPPR-17A: 650 MWe class, axially-heterogeneous clean core in JUPITER: medium characteristics between homogeneous and radially-heterogeneous core from core-coupling.
9. ZPPR-19B: 1000 MWe class, two-region homogeneous core with enriched uranium in the outer core region in JUPITER: the largest FBR mockup core in the history.
10. AVR HTR Experiments
11. OECD/Dragon GCR Experiments

IRPhE Primary Documentation Archives

1. IRPHE/B&W-SS-LATTICE, Spectral Shift Reactor Lattice Experiments
2. IRPHE-JAPAN, Reactor Physics Experiments carried out in Japan
3. IRPHE/JOYO MK-II, JOYO MK-II core management and characteristics database
4. IRPhE/RRR-SEG, Reactor Physics Experiments from Fast-Thermal Coupled Facility
5. IRPHE-SNEAK, KFK SNEAK Fast Reactor Experiments, Primary Documentation
6. IRPhE/STEK, Reactor Physics Experiments from Fast-Thermal Coupled Facility
7. IRPHE-ZEBRA, AEEW Fast Reactor Experiments, Primary Documentation
8. IRPHE-DRAGON-DPR, OECD High Temperature Reactor Dragon Project, Primary Documents
9. IRPHE-ARCH-01, Archive of HTR Primary Documents
10. IRPHE/AVR, High Temperature Reactor Experience, Archival Documentation
11. IRPHE-KNK-II-ARCHIVE, KNK-II fast reactor documents, power history and measured parameters