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NUCLEAR ENERGY AGENCY
NUCLEAR SCIENCE COMMITTEE

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SIXTH MEETING OF THE EXPERT GROUP ON SHIELDING ASPECTS OF ACCELERATORS, TARGETS AND IRRADIATION FACILITIES (SATIF-6)

ANNOUNCEMENT AND PROPOSED PROGRAMME

10 to 12 April 2002
Stanford Linear Accelerator Center, Menlo Park, USA

English - Or. English

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OECD Nuclear Energy Agency
Nuclear Science Committee

Expert Group on Shielding Aspects of Accelerators, Targets and Irradiation Facilities

Sixth Meeting (SATIF-6)

April 10-12, 2002
Stanford Linear Accelerator Center
2575 Sand Hill Road, Menlo Park, CA 94025, USA

ANNOUNCEMENT AND PROPOSED PROGRAMME

Introduction

Particle accelerators have evolved over the last decades from simple devices to powerful machines and are having an increasingly important impact on research, technology and lifestyle. Today they cover a wide range of applications including material science, radioisotope production or transmutation and medical applications. In recent years, requirements from new technological and research applications have emerged and the number of accelerator facilities in operation, being commissioned, designed or planned has significantly increased. Their parameters (such as the beam energy, beam currents and intensities, targets composition, etc.) vary widely giving rise to new radiation shielding aspects and problems.

Scope and Objectives

The activities of the Task Force on Shielding Aspects of Accelerators, Targets and Irradiation Facilities (SATIF) are sponsored by the OECD Nuclear Energy Agency (NEA) and its Nuclear Science Committee (NSC) and co-sponsored by the Radiation Safety Information Computational Center (RSICC). The main objectives of the SATIF Meetings are to:

1. Promote the exchange of information among experts in the field of accelerator shielding and related topics,
2. Identify areas where international co-operation can be fruitful and
3. Carry on a program of work in order to achieve progress in specific priority areas.

Venue

The Sixth Specialists Meeting on Shielding Aspects of Accelerators, Targets and Irradiation Facilities (SATIF-6) will take place at the Stanford Linear Accelerator Center, Menlo Park, CA in the USA from April 10 to12, 2002.

Sponsors

This event is jointly organised by the:
- OECD Nuclear Energy Agency
- Stanford Linear Accelerator Center (SLAC)
- Radiation Safety Information Computational Center (RSICC) and
- Shielding Working Group of the Reactor Physics Committee of Japan

Scientific Committee

The members of the Scientific Committee of SATIF-6 are:

A. Fasso (CERN)
H. Hirayama (KEK)
B. Kirk (RSICC)
N. Mokhov (FNAL)
T. Nakamura (U. Tohoku-Vice Chair)
S. Rokni (SLAC-chair)
E. Sartori (OECD/NEA- Secretary)
M. Silari (CERN)
G. Stevenson (CERN)
P. Vaz (ITN)
L. Waters (LANL)

Executive Committee

The members of the Executive Committee, in charge of the preparation of the Technical Programme for SATIF-6 and its submission to the Scientific Committee, are:

B. Kirk (RSICC)
T. Nakamura (U. Tohoku-Vice Chair)
S. Rokni (SLAC-Chair)
E. Sartori (OECD/NEA- Secretary)
G. Stevenson (CERN)
P. Vaz (ITN)

Location

The location of the workshop will be in the Panofsky Auditorium, Building 43, at the Stanford Linear Accelerator Center (SLAC) located west of the Stanford campus and approximately 33 miles from San Francisco.

Participation

Participation is limited to members of the SATIF Group or participants designated by National authorities. Registration forms can be accessed on the following Web page:
http://www-project.slac.stanford.edu/satif6/registration.html.

Instructions for authors

Instructions for authors can be found at the following Web page:
http://www.nea.fr/html/science/docs/authors.pdf. Proceedings will be prepared after the workshop including an executive summary describing the progress achieved and the programme of work for the coming two years.

For further details on local organisation, how to reach the meeting place, requirements for travel and visa, accommodation, access to SLAC please visit
http://www-project.slac.stanford.edu/satif6/

Programme

The proposed programme is enclosed as an Annex.

Contact Information

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Sixth Workshop on

Shielding Aspects of Accelerators, Targets and Irradiation Facilities

SATIF-6

PROPOSED PROGRAMME

April 10-12, 2002
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Session 1 Source Term and Related data - Proton and Ion Accelerators and Spallation Sources

Topics:

- High Energy Proton and Heavy Ion Machines
- Spallation Neutron Sources

1-01 Takashi Nakamura, Tadahiro Kurosawa, Takashi Kato: Double-differential thick target neutron yields by heavy ions

1-02 Hiroshi Nakashima and ASTE collaboration team : Current Status on AGS Spallation Target Experiment

1-03 S. Teichmann, B. Amrein, J. Gerig, W. Hajdas, H. Temnitzer : Dose rate measurements behind different shielding for 250 MeV protons on a thick copper target

1-04 I. Koprivnikar, E. Schachinger : The Biological Shield of a High Intensity Spallation Source: a Monte Carlo Design Study

1-05 S. Agosteo, T. Nakamura and M. Silari: Attenutation curves in concrete of neutrons from 100-800 MeV per nucleon He, C and Ne ions

1-06 Marco Silari and Helmut Vincke : The effect of a beam loss at the PS/n_TOF interface of the CERN PS complex

1-07 C. Borcea, P. Cennini, A. Ferrari, Y. Kadi, V. Lacoste, E. Radermacher, C. Rubbia, V. Vlachoudis, L. Zanini : Radioprotection and shielding aspects of nTOF spallation source

1-08 Lawrence Heilbronn, Hiroshi Iwase, Yoshiyuki Iwata, Takashi Nakamura, Reginald Ronningen, Larry Townsend, Yuichi Tozawa : Neutron Production Measurements Relevant to Shielding for Space-Related Activities

1-09 M. Brugger, G. R. Stevenson: The Radiological Situation in the NA60 Experiment

Session 2 Measurements and Calculations of Induced Radioactivity

2-01 S. H. Rokni, A. Fasso, T. Gwise, J. C. Liu, S. Roesler and R. Sit : Comparison of Calculations and Measurements of Induced Activity of Different Materials at SLAC

2-02 H. Vincke, I. Brunner and M. Huhtinen : Production of radioactive isotopes in Al, Fe and Cu-samples by stray radiation fields at a proton accelerator

2-03 Andrew Puryear, James C. Liu* and Sayed Rokni : FLUKA Calculations of Radionuclides, Star, and Neutron Fluence in Soil Around the High-Energy Electron and Proton Linear Accelerators

2-04 Hiroshi Yashima, Hiroshi Sugita, Takashi Nakamura, Yoshitomo Uwamino, Sachiko Ito, Akifumi Fukumura : Induced radioactivities of spallation products by various projectile ions

Session 3 Benchmarking- Calculations and Results

Topics:

- Neutron attenuation length
- Deep penetration experiment
- Neutron dosimetry benchmark
- Electron-photon benchmark
- Photo-neutron production cross-sections and data Activation calculations and measurements

3-01 Hideo Hirayama: Inter-comparison of the Medium Energy Neutron Attenuation in Iron and Concrete (4)

3-02 Danas Ridikas and Peter Vertes: Code and Data Benchmarking with the New IAEA Photonuclear Data Library

3-03 S. G. Mashnik, K. K. Gudima, N. V. Mokhov, R. E. Prael, and A. J. Sierk : Benchmarking Codes for Proton Radiography Applications

3-04 S. Roesler, J. C. Liu, and S. H. Rokni : Calculation of Neutron Time-of-Flight and Energy Spectra Behind Thick Shielding of an Electron Accelerator and Comparison to Experimental Data

3-05 S.Taniguchi, M.Sasaki, T.Nunomiya, H.Iwase, S.Yonai, T.Nakamura, S.H.Rokni, J.C.Liu, S.Roesler, K.Kase: Shielding experiment of neutrons through concrete outside the beam dump of 28.4 GeV electron linear accelerator

3-06 N.Nakao(KEK), N.V.Mokhov (FNAL), Y.Irie (KEK), K.Yamamoto (JAERI), A.Drozdhin (FNAL) : Deep penetration calculation along the whole ring tunnel of JAERI-KEK 3GeV proton synchrotron using MARS code

3-07 T. Nunomiya, N. Nakao, P. Wright, T. Nakamura, E. Kim, T. Kurosawa, S. Taniguchi, M. Sasaki, H.Iwase, Y. Uwamino, T. Shibata, S. Ito, David R. Perry: Deep penetration of neutrons produced by 800 MeV protons through concrete and iron at ISIS

3-08 Giuseppe Maino, Enzo Menapace : Photonuclear Reaction Data Calculations by Algebraic Model Approach for Radiation Shielding Purposes in the International Context.

Session 4 Dose and Related Issues

Topics:

- Dosimetry & Dose calculations
- Anthropomorphic Computational Models
- Dose conversion coefficients for "high energy" radiations

4-01 M. Pelliccioni : Conversion Coefficients: an addition to existing data

4-02 V.Mares and H.Schraube : The Effect of the Fluence to Dose Conversion Coefficients upon the Dose Estimation to Cosmic Radiation

4-03 Albrecht Leuschner : Feasibility Study on an Active Neutron Dosemeter based on Carbon Activation for the Linear Collider TESLA

4-04 Y. Sakamoto, S. Tsuda, T. Sato, N. Yoshizawa, H. Hirayama : Benchmark Calculation with Simple Phantom for Neutron Dosimetry (2)

4-05 Panakkal K. Job and Julie Alderman: Radiation levels experienced by the insertion devices of the Third Generation Synchrotron Radiation Sources

Session 5 Status of Computer Codes, Cross Sections and Shielding Data Libraries

Topics:

- Status of Computer Codes, cross-sections and Data Libraries for
- Accelerator Shielding Modeling
- Activation calculations and measurements

5-01 H. T. Hunter, B. L. Kirk, J. B. Manneschmidt, E. Sartori : Progress Report on the Available Analytical Tools for Accelerator Shielding Analysis 2002

5-02 S. G. Mashnik, K. K. Gudima, and A. J. Sierk : Merging the CEM2k and LAQGSM Codes with GEM2 to Describe Fission and Light-Fragment Production

5-03 Nikolai Sobolevsky, Irena Gudowska : Interaction of Ion Beams with Tissue Like Media with the SHIELD Transport Code.

5-04 Katsumi Hayashi, Ryuichi Tayama, Hiroyuki Handa, Kazuo Shin, Hideo Hirayama, Hideo Nakano, Fumihiro Masukawa, Hiroshi Nakashima, Nobuo Sasamoto : Analytical Method for Multi-Scattered Neutron in Cavity used in DUCT-III Code

5-05 Hiroshi Iwase, Tadahiro Kurosawa, Takashi Nakamura, Nobuaki Yoshizawa, Jun Funabiki: Development of heavy ion transport Monte Carlo code

5-06 A. Fasso, A. Ferrari, P.R. Sala and G. Tsiledakis : Implementation of Xenon Capture Gammas in FLUKA for Background Calculations in a Transition Radiation Detector

5-07 N. Mokhov : Status of MARS Code

Session 6 Shielding in Medical Accelerator Applications

6-01 Bhaskar Mukherjee: Principle of Radiological Shielding of Medical Cyclotrons

6-02 Wayne D. Newhauser, Uwe Titt and Dale T. Dexheimer : A Perspective on Shielding Design Methods for Future Proton Therapy Facilities

Session 7 Follow-up of past SATIF agreements and actions

Session 8 Discussion/Summary and Future Actions.