

COMMISSION OF THE EUROPEAN COMMUNITIES
COMMISSION DES COMMUNAUTÉS EUROPÉENNES



Dosimetry methods for fuels, cladding and structural materials

PROCEEDINGS
of the
Third ASTM-Euratom Symposium
on
Reactor Dosimetry

Ispira (Varese), Italy, 1 to 5 October 1979

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H. RÖTTGER

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INTRODUCTION / PREFACE

The "Third ASTM-Euratom Symposium on Reactor Dosimetry" was held at the Ispra Establishment of the Joint Research Centre (JRC) of the Commission of the European Communities. It continued the series of biennial international symposia in the field of neutron metrology for materials irradiation studies.

The first meeting at JRC Petten in September 1975*) was primarily aimed at defining the state-of-the-art of neutron metrology and damage analysis programmes and identifying the needs of the dosimetry community.

The second meeting at Palo Alto in October 1977 **) emphasized more the data, methods, and techniques used to characterize the neutron environment and the utilization of well characterized neutron fields for irradiation of nuclear fuels, cladding and structural materials.

The theme of the third symposium was intended to be the interface between material experts and Dosimetry metrologists and covered the following topics:

- Radiation damage correlations of structural materials and damage analyses techniques
- Materials radiation dosimetry outside the reactor core
- Dosimetry for fusion materials
- Dosimetry needs for new fuel cycles
- Dosimetry and metallurgy for fuels irradiations
- Neutron benchmark measurements, calibrations and validations of dosimetry and metallurgy methodology, including applications of light water pressure vessel simulators
- Recent advances in dosimetry data and techniques
- Fundamental research and new concepts for materials damage and reactor dosimetry
- Neutron metrology methods guided by safety considerations and safety regulations

The Proceedings in-hand contain the full texts of 120 papers and workshop reviews, plus the summaries by the chairmen of the eight workshop sessions. The summaries were presented in the final session of the meeting "Review of the Results of the Symposium" but are placed here at the top of the workshop contributions concerned. Some workshop reviews of the plenary sessions in the morning were only presented orally and could not be included in the proceedings.

Most of the papers were submitted in a "camera-ready" form and are reproduced exactly as they were submitted. Only in a few cases has text been re-typed.

It should be noted that some papers submitted to the Ispra-Symposium were also presented to an IAEA Technical Committee Meeting on "Accuracies in Correlation between Property Change and Exposure Data from Reactor Pressure Vessel Steel Irradiation" at KFA Jülich, 24-27 September 1979.

H. Röttger

*) *Proceedings of the First ASTM-Euratom Symposium on Reactor Dosimetry, Petten, Netherlands, September 22-26, 1975.*

EUR 5667 e/f, Part I, II and Supplement (1977).

**) *Proceedings of the Second ASTM-Euratom Symposium on Reactor Dosimetry, Palo Alto, California, USA, October 3-7, 1977.*
NUREG/CP-0004, 3 Volumes, US-NRC.