Body of Abstract: Radiation protection dosimetry in mixed neutron/photon fields is still far less established than that for photon radiation alone. The EVIDOS project (“Evaluation of Individual Dosimetry in Mixed Neutron and Photon Radiation Fields”), funded by the EC, aims at a significant improvement by spectrometric and dosimetric investigations in representative neutron/photon workplaces in the nuclear industry. In particular, new spectrometry methods are being developed which provide the energy and angle distribution of the neutron fluence from which the relevant dosimetric quantities are calculated and to which the readings of dosimeters are compared.

The spectrometric and dosimetric instruments used are either developed within the project, were developed by the partners outside the project or are commercially available. The well-established instruments include multisphere spectrometers, commercial area monitors and routine personal dosimeters. The new devices, developed recently, comprise new area monitors, electronic personal dosimeters and two different spectrometers that simultaneously determine the energy and direction distribution of neutrons.

The first measurement campaign, carried out October 2002 in a simulated work place field (IRSN, Cadarache, F), aimed at an important test of all devices. This test is based on the comprehensive characterisation of this field performed by experimental methods and Monte Carlo simulations. Further measurement campaigns were carried out April and June 2003 in workplaces representative for nuclear industry, namely at a boiling water reactor (Kernkraftwerk Krümmel, DE), a storage cask with used fuel elements (Kernkraftwerk Krümmel, DE), a MOX fuel element processing plant (Belgonucléaire, Mol, BE) and a research reactor (SCK-CEN, Mol, BE). Future campaigns are planned for a plutonium processing plant (BNFL, Sellafield, UK), a thermal oxide reprocessing plant (BNFL, Sellafield, UK), a pressurised water reactor (Ringhals, SE) and a further transport cask (Ringhals, SE).

The paper gives an overview on the aims and work plan of the project and the different instruments used. It shows a selection of the results obtained to date and summarises first conclusions.