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**PAPER TITLE** Dose characteristics of the IHEP reference fields

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**ABSTRACT** (See instructions overleaf)

One of most important problem for radiation monitoring procedure at IHEP is to create and investigate the reference radiation fields, which adequately simulate the accelerator radiation conditions, for the goals of correct dosimeters calibration. It is assumed that the IHEP reference fields set has to include the following groups of reference fields: 1) based on neutron radionuclide sources, 2) behind the biological accelerator shield (including high-energy fields), 3) creating by charged particles such as muons.

The results of dose characteristics investigation of the IHEP reference fields based on radionuclide sources  $^{239}\text{Pu}$ -Be and  $^{252}\text{Cf}$  are presented in the paper. The neutron ambient dose equivalents measured in these fields are compared with those calculated from the neutron spectra measured by multisphere spectrometer and monocrystal stilbene spectrometer.

The instruments being used in the dose characteristics measurement as well as the calibration procedure of these instruments on the primary National Standard neutron and proton fields at VNIIFTRI (State Standard of Russia) are described.

Neutron response functions of the instruments are calculated in energy range up to 1 GeV in order to analyze the systematical errors arising when the instruments could be applied in the high-energy reference fields. Configuration of a set of dosimetric and spectrometric instruments requiring for high-energy reference fields investigation is discussed. Preliminary measured dose characteristics of the IHEP high-energy reference radiation fields are given.