15 Annex - Energy

79. RULEBOOK ON REQUIREMENTS TO BE MET BY LEGAL ENTITIES FOR CARRYING OUT SYSTEMATIC EXAMINATION OF THE CONTENTS OF RADIONUCLIDES IN THE ENVIRONMENT

RULEBOOK

ON REQUIREMENTS TO BE MET BY LEGAL ENTITIES FOR CARRYING OUT SYSTEMATIC EXAMINATION OF THE CONTENTS OF RADIONUCLIDES IN THE ENVIRONMENT

(Official Gazette of the FRY 32/98, 67/2002 and 70/2002 - corr.)

I BASIC PROVISIONS

Article 1

This Rulebook shall prescribe requirements in regard to staff, equipment and space to be met by legal entities that carry out systematic examination of the radionuclide contents in the environment in regular conditions, in case of a suspected emergency and during an emergency.

Legal entities referred to in paragraph 1 of this Article shall carry out systematic examination of the radionuclide contents by measuring the level of external radiation, gamma-spectrometric measuring of radionuclide contents in the samples from the environment, examination of the contents of tritium and strontium in the environment samples and measuring radon contents in the air.

Article 2

Instruments used for measurements for the purpose of systematic examination of the radionuclide contents in the environment must meet the prescribed metrological requirements.

II EXAMINATION THE DEGREE OF THE EXTERNAL RADIATION

Article 3

Legal entities may carry out examination of the level of external radiation by measuring the intensity of the absorbed dose of gamma radiation in the air and by measuring the absorbed dose of gamma radiation in the air provided they have as follows:

a) Staff

1) a graduate electrical engineer – with the major in technical physics or in medical and nuclear techniques or a person with a university degree in physics or in physical chemistry, who has a master degree or specialisation in protection against ionising radiation and three years of working experience on tasks of protection against ionising radiation;

2 a graduate electrical engineer – with the major in technical physics or a person with a university degree in physics or in physical chemistry, who has three years of working experience on tasks of protection against ionising radiation and has been trained for carrying out measures for protection against ionising radiation;

3) a person who has acquired at least IV (secondary school) degree of vocational education in electro-technical or mathematical sciences, trained for carrying out measures for protection against ionising radiation;

b) Equipment

1) dosimeter for continuous measurement of the intensity of the absorbed dose of gamma radiation in the air (from 0.1 mGy/h to 15 mGy/h) with resolution of 0.01 mGy/h;

2) TL dosimeters which meet metrological requirements for measurement of the absorbed dose of gamma radiation in the air in the environment;

3) TL reader;

4) radioactive measuring standard source for calibration of TL dosimeters;

5) computer for processing and recording of readings;

c) Space

1) premises for reading of dosimeters;

2) premises for calibration of dosimeters and adequate space for safekeeping of calibration sources of ionising radiation;

3) premises for processing of readings.

III GAMMA SPECTROMETRIC EXAMINATION OF THE RADIONUCLIDE CONTENTS IN THE ENVIRONMENT SAMPLES

Article 4

Legal entities may carry out gamma spectrometric examination of the radionuclide contents in the environment samples (air, solid and liquid precipitation, rivers, lakes, seas, soil, potable water, food, items of general use, livestock feedstuff and construction material), provided they have as follows:

a) Staff

1) a graduate electrical engineer – with the major in technical physics or in medical and nuclear techniques or a person with a university degree in physics or in physical chemistry, who has a master degree or specialisation in protection against ionising radiation and three years of working experience on tasks of protection against ionising radiation;

2) a graduate electrical engineer – with the major in technical physics or a person with a university degree in physics or in physical chemistry, who has three years of working experience on tasks of protection against ionising radiation and has been trained for carrying out measures for protection against ionising radiation;

3) a person who has acquired at least IV (secondary school) degree in mathematical and natural sciences, with the major in physics or chemistry, trained for carrying out measures for protection against ionising radiation;

b) Equipment

1) semi-conduction gamma spectrometer with computerised data processing, the efficiency of which is not less than 18%, and resolution is 1.8 keV at the energy of 1.33 MeV in low-phonic protection which must enable lowering of the phon to a maximum of three impulses in a second for an energy range of 40 keV to 2700 keV and the efficiency of 18%;

2) scintillation gamma spectrometer with NaI detector 3x3 inches, resolution of 6.8% and efficiency of 8.7% for 137Cs with computerised data processing;

3) set of radioactive measuring standard sources for calibration;

4) equipment for preparation of samples (dryer, incandescence kiln, spring-balance, mill, crusher, pairing system);

5) standard laboratory instruments and vessels;

6) system for taking samples of the air with air flow of at least 300 m3 per 24 hours;

7) computer;

c) Space

1) Premises for preparation of samples;

2) Premises for washing laboratory instruments and vessels;

3) low-phonic laboratory;

4) premises for processing of readings;

5) premises for storing of samples.

The legal entity that performs only tasks of gamma spectrometric examination of the radionuclide contents in samples of foodstuffs of herbal and animal origin and livestock feedstuffs shall, in addition to the requirements referred to in paragraph 1 of item 1 of this Article, employ either a veterinarian with a PhD degree in protection against ionising radiation with 5 years of relevant working experience on tasks of protection against ionising radiation and trained for carrying out measures for protection against ionising radiation.

IV EXAMINATION OF THE TRITIUM CONTENTS IN THE ENVIRONMENT SAMPLES

Article 5

Legal entities may carry out examination of the tritium contents in the environment samples (from rivers), provided they have as follows:

a) Staff

1) a person with a university degree in physical chemistry or in physics, who has a master degree or specialisation in protection against ionising radiation and three years of working experience on tasks of protection against ionising radiation;

2) a person with a university degree in physical chemistry or in physics, who has three years of working experience on tasks of protection against ionising radiation and has been trained for carrying out measures for protection against ionising radiation;

3) a person who has acquired at least IV (secondary school) degree of vocational education in chemistry science, trained for carrying out measures for protection against ionising radiation;

b) Equipment

1) equipment for beneficiation of the tritium contents in the environment samples;

2) liquid scintillation counter for low-energy beta emitters;

3) set of radioactive measuring standard sources for calibration;

4) computer;

c) Space

1) laboratory premises for preparation of samples which meets the requirements for radiochemical laboratories;

2) premises for washing laboratory instruments and vessels;

3) premises for measurement of samples;

4) premises for storing of samples;

5) premises for processing of readings.

V EXAMINATION OF THE STRONTIUM CONTENTS IN THE ENVIRONMENT SAMPLES

Article 6

Legal entities may carry out examination of the strontium contents in the environment samples (air, solid and liquid precipitation, rivers, lakes, seas, soil, potable water, foodstuffs, items of general use, livestock feedstuffs and building materials), provided they have as follows:

a) Staff

1) a person with a university degree in physical chemistry or in chemistry, who has a master degree or specialisation in protection against ionising radiation and three years of working experience on tasks of protection against ionising radiation;

2) a person with a university degree in physical chemistry or in chemistry, who has three years of working experience on tasks of protection against ionising radiation and has been trained for carrying out measures for protection against ionising radiation;

3) a person who has acquired at least IV (secondary school) degree of vocational education in chemistry science, trained for carrying out measures for protection against ionising radiation;

b) Equipment

1) proportional low phonic beta counter;

2) standard laboratory equipment for preparation of samples (dryer, incandescence kiln, spring-balance, centrifuge);

3) standard laboratory vessels;

4) system for taking samples of the air with air flow of at least 300 m3 per 24 hours;

5) set of radioactive measuring standard sources for calibration;

6) computer;

c) Space

1) laboratory for preparation of samples which meets the requirements for radiochemical laboratories;

2) premises for washing laboratory instruments and vessels;

3) premises for measurement of samples;

4) premises for processing of readings;

5) premises for storing of samples.

VI EXAMINATION OF THE RADON CONTENTS IN THE AIR

Article 7

Legal entities may carry out examination of the radon contents in the air in residential premises and working environment provided they have as follows:

a) Staff

1) a person with a university degree in physical chemistry or in physics or a graduate electrical engineer with the major in technical physics, who has a master degree or specialisation in protection against ionising radiation and three years of working experience on tasks of protection against ionising radiation;

2) a person with a university degree in physical chemistry or in physics or a graduate electrical engineer with the major in technical physics, who has three years of working experience on tasks of protection against ionising radiation and has been trained for carrying out measures for protection against ionising radiation;

3) a person who has acquired at least IV (secondary school) degree of vocational education in chemistry science, trained for carrying out measures for protection against ionising radiation;

b) Equipment

1) diffusion radon chamber with trace detectors or an electronic ion chamber or a system for collecting samples with carbonic absorbers with appropriate gamma spectrometric equipment or a silicon (Si) semi-conducting detector or a scintillation radon chamber;

2) adequate system for calibration;

c) Space

1) laboratory premises;

2) premises for processing of readings.

VII EXAMINATION OF THE DEGREE OF THE ENVIRONMENT CONTAMINATION IN CASE OF A SUSPECTED EMERGENCY AND DURING AN EMERGENCY

Article 8

Legal entities may carry out examination of the degree of the environment contamination in case of a suspected emergency and during an emergency provided that, apart from meeting the requirements referred to in Articles 3, 4 and 6 hereof, they also have as follows:

1) portable air sampler;

2) sampling filters 1311;

3) alpha spectrometric system.

VIII FINAL PROVISIONS

Article 9

This Rulebook shall come into force on the eighth day following that of its publication in the Official Gazette of the FRY.