



Contribution ID: 466

Type: POSTER

Remote detection of raised radioactivity in emission from Beloyarsk nuclear power plant

Tuesday 27 June 2017 17:30 (1h 30m)

In the paper, we consider the gas-aerosol radioactive emissions and theoretically justify the possibility of remote detection of increased radioactivity in air emissions from the nuclear reactor BN. The comparative analysis of injected radionuclides into the atmosphere from nuclear power plant with advanced fast neutron reactor is carried out. On example of Beloyarsk nuclear power plant, the problem of remote detection of radioactivity in the atmospheric pollution is examined. Considering the emissions of certain groups, we can conclude: inert gases in the extract tritium in gaseous and liquid emissions, ^{14}C and ^{131}I in the exhaust air, the radioactivity is adsorbed on the particles in the polluted air, and "other" contained in the liquid emissions.

Table 1. The average value of radionuclide emissions (1985-1989) of the nuclear reactor on fast neutrons.

<https://docs.google.com/drawings/d/1W-xBLuTjKuIGlb4aXA7Ok5sAiKwGDUn4fK6o4D3GU/edit?usp=sharing>

Taking into account the total activity of radioactive noble gases and feasibility of remote detection of raised radioactivity in emission from nuclear power plant and radio-chemical plant, we make a conclusion that radiometric system able to detect radioactive emission from NPP with fast neutron reactor.

The reported study was funded by RFBR, according to the research project No. 16-38-60115 mol_a_dk.

Country/Int. Organization

Russia, V.E. Zuev Institute of Atmospheric Optics SB RAS,

Author: Mr KOLOTKOV, Gennady (V.E. Zuev Institute of Atmospheric Optics SB RAS)

Co-author: Mr PENIN, Sergei (V.E. Zuev Institute of Atmospheric Optics SB RAS)

Presenter: Mr KOLOTKOV, Gennady (V.E. Zuev Institute of Atmospheric Optics SB RAS)

Session Classification: Poster Session 1

Track Classification: Track 4. Fuel Cycle: Sustainability, Environmental Considerations and Waste Management Issues