

SYSTEM FOR CONTINUOUS MONITORING OF RADIOACTIVE CONTAMINATION OF SURFACE WATER BODIES

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This paper reports on the structure of the autonomous station for monitoring artificial gamma activity in surface water bodies for the purposes of emergency preparedness of the Czech Republic. A simple design based on the NaI(Tl) submersible detector powered by a combined solar and wind source has been employed. Data transfer is provided by a satellite connection. The detection capabilities of the device have been tested for various unfavourable conditions, and the detection limits have been lowered by using the noise adjustment singular value decomposition (NASVD) method. The detection capabilities of the device fulfil the legal requirements for emergency monitoring, and are almost equal to the detection capabilities of other available devices with a more complicated and less versatile structure. A monitoring network consisting of three monitoring stations was built in the Czech Republic. These stations are placed in spots that are important from the point of view of water vulnerability from radioactive contamination.