

Prospects for the use of atmospheric optical communication at nuclear power plants

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The analysis of the prospects for the use of atmospheric optical communication lines on the territory of the nuclear facilities was carried out. It is shown that modern Russian atmospheric communication terminals make it possible to implement high-speed data exchange within the perimeter of a nuclear power plant, as well as to provide an external backup communication channel protected by quantum key distribution technology. A technique for assessing the feasibility of using atmospheric optical communication at nuclear power plants is presented. Based on long-term meteorological observations for the Kursk nuclear power plant, graphs of the availability of atmospheric communication are constructed. High prospects for the use of atmospheric laser communication at industrial power complexes located in the central and southern federal districts of Russia are shown.

Keywords: atmospheric optical communication, quantum key distribution, nuclear power plant safety, communication line availability factor.

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