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This year SUEK has started using drones equipped with thermographic camera for diagnosing heat networks u. This kind of aerial inspection has already been carried out in Novosibirsk, Barnaul, Abakan and Chernogorsk. And now, the drone has arrived in Kuzbass, or more precisely, in Novokuznetsk, although actually it has returned there.

This time a 7-kilometre above-ground heating section in the Kuznetsk District of the city was inspected. It cannot be surveyed by a ground-based survey because of numerous thickets and ravines. Aerial survey is much faster and more compelling. Before launching the drone, technicians once again checked its route and the location plan.

Its task is to detect possible heat loss sections. The reason may be damaged insulation or other defects. Night time is perfect for this as at night, solar radiation, that is, direct sunlight, does not affect the pipeline, which means that the reflected heat will not interfere with diagnostic activities. The heating main runs close to the highway, so at night, the thermal noise caused by passing cars is minimal.

For the duration of its flight, the drone captures in two modes. First, it captures the heat pipeline like an ordinary camera, and then it applies the infrared mode. Various colours on the display in infrared mode show temperature distribution. When the colour of the pipeline is more uniform, the less suspicion there is of defects. A bright spot means that additional inspection is required. The next step is decoding of the images, defect mapping and setting repair schedules.

This new diagnostic method using drones equipped with thermographic cameras has already proven its efficiency. A similar inspection of the heating main in Kirov Street was carried out last spring. The camera detected a 300-metre section with obvious heat loss. By the beginning of the heating season, the pipe in that section was replaced, which noticeably reduced the risk of emergencies and stabilised the hydraulic characteristics in the Central District of Novokuznetsk.