

An Analysis of the Detection of Water Leakage in Pipes Through the Use of Sensors

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Abstract: *This paper suggests a novel approach to leak detection and location that is based on sensors. Wireless Sensor Networks (WSN) have been primarily employed in military applications due to their reliability and efficacy. In numerous civilian applications, including leakage detection, it is now regarded as the first-hand method. Different kinds of applications necessitate consideration of a variety of technical issues, such as power consumption. WSN has recently become a viable solution for water leakage. Pipelines are utilized to transport water from water sources such as lakes and rivers to urban areas. Non-Revenue Water (NRW) is the quantity of water that has been produced and subsequently lost prior to reaching the consumer. It may be the result of defective meters, illicit connections, and leakage. The primary objective of this paper is to create a leak and water monitoring system that utilizes the concept of IoT. This system will include a flow sensor that can be used to detect leaks and solenoid valves that are placed in various pipeline sections to obstruct the flow of water until the defective part of the pipeline is repaired. It is important to note that water leakage is a global issue that has already escalated to a critical issue in numerous regions. In addition, the relevant authorities will be wirelessly informed of the breach once it has occurred.*

Keywords: Sensor Technology, Leakage Detection, Pipeline Monitoring, Data Analysis