Abstract

This paper deals with a study of life prediction of a pipeline in service based on the theories and methods of probabilistic fracture mechanics. The steel pipe is API 5L specification, has an outer diameter of 203.2 mm and a length of 72 kilometers. To conduct the study, the surface and pipeline welded joints were inspected and analyzed using ultrasound equipment. So, defects such as cracks, undercuts, oxidation and corrosion were detected on the surface of the pipeline. In addition, the thickness of the pipe was measured. Then, dimensions cracks and life were determined from the data obtained from the measurement data of the defects, pressure, mechanical properties and remaining thickness of pipe.

Keywords

Lifespan, defects, propagation velocity and fracture mechanics.