1. Introduction

Pipelines have been laid in large numbers in Japan and other countries and are actively utilized as an efficient means of transporting natural gas, petroleum, and other resources. However, it is an unavoidable fact that the reliability of pipelines is reduced by various factors as time passes after pipe laying. These include corrosion, deformation, and displacement of the original position of the pipeline by earthquakes, land subsidence, and the like. In 1988, JFE Engineering developed a practical ultrasonic tool for pipeline inspections and began corrosion/deformation inspection services. In 2003, the company developed a practical mapping tool and began

tem, the progress of corrosion (corrosion growth rate) is analyzed by a detailed comparison of two sets of corrosion data (depth and size of corrosion), which is performed by an analytical program.

In many cases, remaining life assessments of pipelines assess the remaining life until the remaining thickness of a corroded part reaches the minimum necessary thickness based on stress calculations, as provided in legal regulations. Taking advantage of JFE Engineering's extensive past experience in pipeline engineering, the company estimates the cause of locations with rapid corrosion growth rates and recommends countermeasures. The company also proposes a schedule for the next inspection based on the results of remaining life assessments.

3. Dimensional Position Inspection

using inspection tools have gradually expanded and are
now becoming firmly established technologies.