

Gas Leak Detection During Earthquakes Possible with the Diamond II+ Annubar

Tokyo Gas is Japan's largest natural gas supplier. A problem they face is distribution of gas in an area made hazardous by earthquakes.

Recently, Tokyo Gas began operating a number of special Annubars that meet rigid requirements of performance and design. The Annubars must fit within small underground manholes and provide accurate readings in spite of short, straight-run piping configurations.

Quality assurance is a major concern, so ANSI Natural Gas Pipeline codes, Japanese industrial codes, ASME welding codes, and traceable material certifications are involved.

Earthquake Strategy

Careful analysis led to a strategy of placement that senses catastrophic changes in flow rates in the event of earthquake damage.

Measurement changes are sent to a central computer that shuts down appropriate valves and reroutes natural gas. Controlled dispersion into the air is part of the strategy, when necessary.

Short Piping Requirement

A critical factor in choosing flow sensors for this application is the need to maintain accurate flow measurement in short piping configurations.

To determine Annubar's capabilities and assure optimal installations and accuracies, extensive analysis was conducted on Tokyo Gas' avail-

Customer:	Tokyo Gas
Product Line:	Diamond II+ Annubar® primary flow element
Application:	Annubars detect natural gas leaks and prevent fires in the event of an earthquake

able mounting locations. Dieterich Standard provided two Annubars that tested successfully at Tokyo Gas' own facilities.

Insert-Retract Mechanism

Another package benefit is the availability of Dieterich Standard's gear drive insert-retract mechanism. This mechanism allows the quickest possible insertion and retraction of the Annubar under full flowing conditions.

This is very important for this application due to the cramped manholes in which the Annubars were installed.

This application demonstrates Dieterich standard's capability to supply almost any customer need in the natural gas field - on a custom engineered basis with stringent design parameters.

