

to be run in high-production flowrates, and special bypass and jetting facilities were incorporated to control their speed and allow sufficient bypass to run the pigs without any interruption to production.

To reduce the pig weight, new body tube designs and special alloys were used, reducing the weight by up to 50%. To cope with the high abrasive conditions in the dry-gas lines, suspension wheels, mounted on a newly-designed trailing arm, were also incorporated. The new designs also used PE's proven *Hyper Omnithane* polyurethane to minimize the wear on the discs. ●

Inspection of non-piggable pipelines

Rosen has developed a robotic ripe scanner (RPS) for the inspection of above-ground non-piggable pipelines.

The RPS is designed for 360° coverage inspection of above-ground carbon steel pipelines that are unsuitable for inspection using intelligent pigs. The tool uses the reliable and proven magnetic-flux technology to provide high-quality inspection results. Typical applications for the system include product lines, flowlines, and firewater lines in refineries. The tools are currently being used in the Middle East for a project covering more than 50 pipelines with various diameters.

The equipment for on-site performance consists of three major components. The self-propelled inspection tool installed on the pipeline, the control panel for manual or remote-control operation, and the data evaluation and visualization electronic notebook. The tool can be opened and clamped on the pipeline within a few seconds.



Screenshot from Rosen's on-site 'visualization notebook'.

Depending on the tool size (available in 6, 8, 10 or 12in), this can be done manually or by use of a crane. An important feature of the RPS is its ability to bypass a variety of installations, like supports: whenever the scanning process pauses at a support, the tool opens and lifts its magnet yokes; afterwards, it lowers and closes the magnet yokes and continues the scanning process. This feature speeds-up the inspection process, allowing fast and reliable inspection of a large number of pipelines.

The on-site visualization notebook provides a real-time view on the inspection results, using *ROSOFT* data-management software that comes with the RPS package. The software, delivered to the client with the final report, offers complete access to all database results. Each defect can be viewed, evaluated in detail, and easily printed for field use. Feature assessment can be carried out in accordance with various codes, for instance POF, RSTRENG, and API 579. ●