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News Buzz

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PRPC deploys advanced 'Reach Master' Robotic Inspection System at HDPE Unit



A glimpse of Reach Master Robotic System



The system being used onsite (R)

In a significant step towards operational excellence, digital transformation, and enhanced workplace safety, the Inspection Department of Panipat Naphtha Cracker (PNC) has successfully deployed the advanced 'Reach Master' Telescopic Robotic Inspection System at the High-Density Polyethylene (HDPE) Unit. This marks the first-ever use of robotic Non-Destructive Testing (NDT) technology at PRPC. Mr M L Dahriya, ED & RH, PRPC, congratulated the PNC Inspection team for this pioneering achievement under the leadership of Mr Sudhanshu Shekhar, CGM (PNC), and appreciated the collective efforts of the department. Traditionally, inspection of elevated equipment and structures required extensive scaffolding, leading to higher costs, longer execution times, and increased safety risks for personnel working at heights. The deployment of Reach Master has transformed this process by enabling complete ground-based remote inspection, significantly enhancing safety while improving efficiency. Following its successful implementation at the HDPE Unit, the Reach Master system is planned for phased deployment across other process units of the refinery, setting new benchmarks in smart, safe, and technology-driven maintenance practices across IndianOil. **(Nikita Kariya, Officer (CC), PRPC, with inputs from Yogesh Kumar, SIPM, PNC)**

About 'Reach Master' Robotic Inspection System

The state-of-the-art system offers highly accurate Ultrasonic Thickness (UT) measurements ranging from 0.8 mm to 250 mm, even through protective coatings up to 20 mm thick. Equipped with a modular pole system extending up to 10 metres, the robot enables surface preparation using rotary brushes and flap discs prior to inspection. A 180-degree rotatable camera head provides real-time visual monitoring, while an integrated feature allows remote touch-up painting of vulnerable areas.

To address diverse operational needs, the initiative employs two specialised robotic configurations. Reach Master-C serves as the industrial workhorse, offering fully remote-controlled, field-maintainable inspection capabilities for routine applications across the plant. Complementing it is Reach Master-Ex, engineered for hazardous Zone 0 explosive gas environments. This intrinsically safe, 100% non-electric system utilizes hydraulic controls and spark-resistant bronze-cased magnets for safe operation in high-risk areas.

Together, these advanced solutions enhance inspection efficiency, ensure personnel safety, reduce downtime, and lower inspection costs by up to 70%.



World Environment Day

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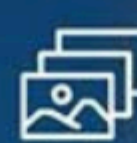
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