

Remote Mechanized Steam Dryer OD/ID Inspection Systems

HawkEYE Remote Steam Dryer Visual Inspection Systems



Automated in-vessel visual inspections (IVVI) can be performed more quickly and with greater quality and traceability than manual or submarine remote inspections.

Reduce Inspection Durations

Originally developed and tailored to meet a specific customer challenge, AREVA's HawkEYE Remote Steam Dryer Inspection Systems deliver innovative tooling solutions for both ID and OD surfaces. These systems offer unsurpassed safety, quality and performance. How? Stable platforms with traceable camera positions reduce the inspection durations and reduce critical path.

HawkEYE II Remote Mechanized Steam Dryer OD Inspection

AREVA replaced the need for an auxiliary bridge and manual camera manipulation with a remotely controlled and motorized / encoded x-y-z manipulator (HawkEYE II). It employs a simple rail and trolley system that mounts on each side of the equipment pit. The rail and trolley system travels over the dryer and above cavity water. A telescoping mast that mounts on the trolley system delivers the camera to the inspection area. Operators and Level II inspectors stationed outside containment can remotely-position and scan all accessible OD welds and components using special 3D control software and a joystick controller.

HawkEYE Remote Mechanized Steam Dryer ID Inspection System

AREVA replaced the use of submarines with a proven underwater crawler to perform the visual inspections on the inside (ID) of the dryer. The existing underwater crawler was modified to deliver a PTZ color inspection camera and air evacuation tool to the accessible ID examination areas via a telescoping mast. The air evacuation tube on the mast removes trapped air at the top of the dryer banks, eliminating poor video quality in those examination areas. The best news? The system is remotely driven from a low-dose area on the refuel floor or outside containment – using only one operator. Level II visual inspectors can simultaneously control fine camera movement while performing the inspections from outside containment.

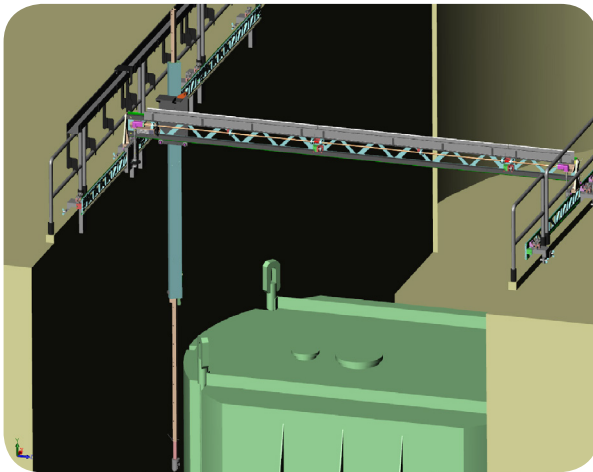


Reliability, Enhanced Safety and Reduced Personnel Exposure

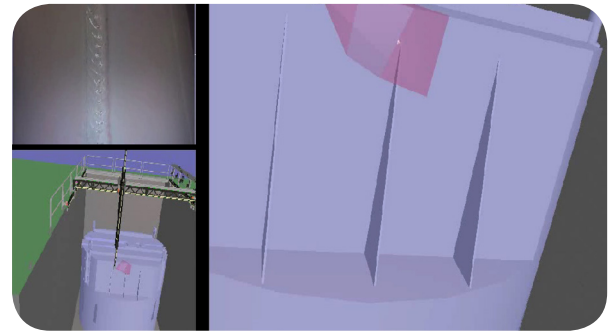
Now, BWR customers can obtain high quality, replayable video to verify the material condition of their dryer. In addition, the system minimizes refuel floor congestion and significantly enhances safety while reducing personnel exposure and improving schedule performance.

Features and Benefits

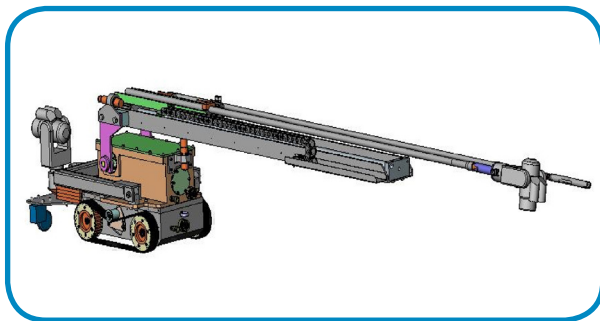
- Greatly enhances inspection quality (very stable images, precise camera positions and angles)
- Level IIs, Level IIIs and operators can all be located outside the reactor building, virtually eliminating radiation exposure during the examinations
- Improves schedule performance
- Significantly reduces equipment and personnel congestion on the refuel floor
- Can perform both OD and ID Exams in parallel
- Automated inspection scans control travel speed, inspection angles, etc.



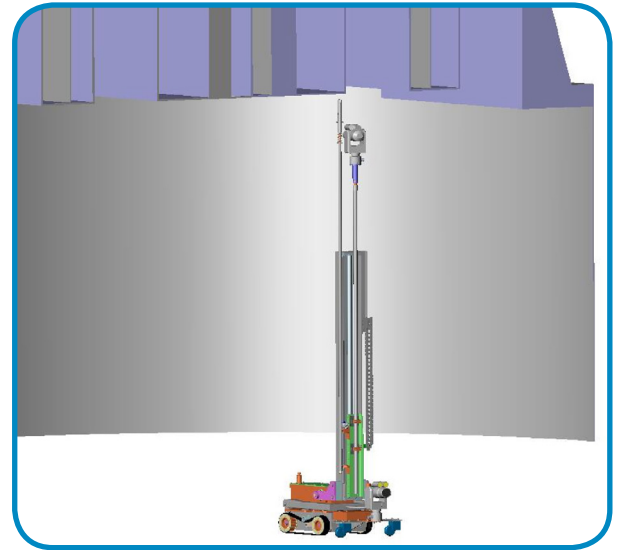
HawkEYE II positioned over Steam Dryer with camera deployed for inspection



HawkEYE II positioning for gusset exam



HawkEYE Underwater Dryer Inspection System
Mast shown in down position



HawkEYE Underwater Dryer Inspection System
Mast shown in upright position under the dryer


HawkEYE-improved IVVI is designed to address regulatory demands for better visual inspection quality and traceability.

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