

# In-Bundle Inspection & Retrieval

Rolls-Royce has revolutionized in-bundle inspection and retrieval with the combination of the Brooks In-Bundle Camera System (BICS) and the Manual In-Bundle Guidetube System (MIGS). The guidetube system and rigid inspection probe penetrate the in-bundle region of both triangular and square pitch steam generators to provide high resolution images.

As the primary means of visual inspection MIGS utilizes an ultra slim inspection probe (BICS) to access in-bundle areas. With a profile of only 2.4mm (.094 in.), the inspection probe can penetrate the in-bundle region of any steam generator model on the market today!

## The right tool for the job

Rolls-Royce offers a variety of inspection options to fit your exact needs. Inspections can be performed with standard 6 mm to 8 mm video probes for simple tasks or the MIGS can be utilized for large scope inspections.. The development of the Robot for Examination of Plates Tubular and Intermediate for all Lines (REPTIL) has added yet another exclusive, remotely operated, dose saving option for the inspection of in-bundle regions of steam generators.

Various types of inspection tooling can be used with these inspection system to perform foreign object search and retrieval (FOSAR).

## Benefits of the Rolls-Royce in-bundle inspection

- Reduce overall dose with remote inspections
- Faster inspection times with fewer tooling changes
- The MIGS and REPTIL rigid inspection system allows for the inspection of the tubesheet, as well as the bottoms of upper support plates
- Triangular and square pitch inspection and retrieval capabilities
- Utilization of exclusive tube counting technology for the most accurate positional feedback (MIGS & REPTIL exclusive)
- Compatible with Rolls-Royce Component Information System (CIS) allowing unmatched data access and trending capabilities

## BICS In-bundle capabilities



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### Repeatable results with cutting edge tube counting software

Brooks tube counting technology allows, Rolls-Royce inspection technicians to optimize retrieval efforts by pinpointing the exact location of foreign objects while flawlessly navigating through the in-bundle region to the desired destination.



### Specialized tooling for difficult retrievals

MIGS and REPTIL are outfitted with a working channel designed to carry specialized miniature retrieval tools through the in-bundle region. A variety of tooling from mini-grippers to high powered magnets allow Rolls-Royce service personnel to locate and retrieve an average of 975 foreign objects from steam generator internals annually!



### Manage high resolution images with the Rolls-Royce exclusive Component Information System (CIS)

High quality imagery is essential for the true characterization of system conditions and identification of foreign objects. MIGS inspections can capture hundreds of high resolution, true color images which can be automatically up-loaded to CIS. CIS gives Rolls-Royce customers the exclusive ability to view inspection data in real time, cutting characterization and decision making time to a minimum.

Images and tracking data are stored on a password protected, secure server and are accessible twenty four hours a day, seven days a week from anywhere in the world.



View up to six tubes deep with high powered LED lighting.

Utilizing CIS, the Rolls-Royce inspection package gives you a powerful tool for the quick and reliable trending of current and past inspection data.



0023/CS/15