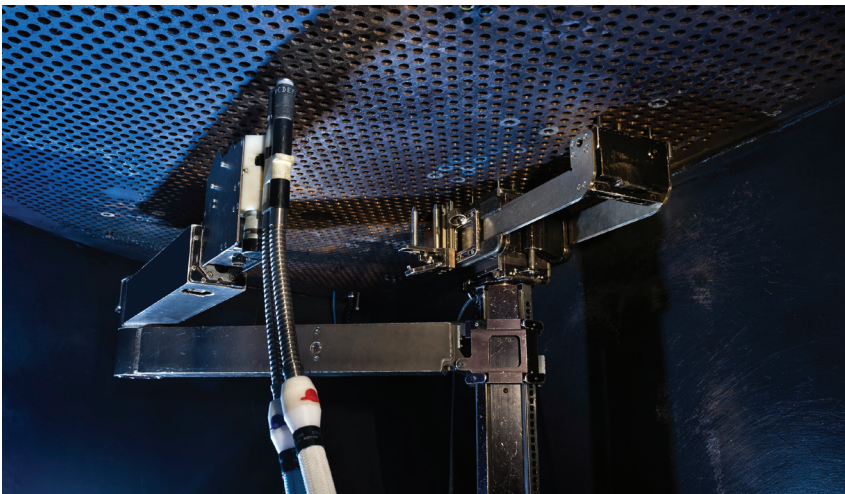


# framatome

## RANGER Manipulator

### Steam Generator Inspection and Repair

Framatome's RANGER manipulator enables faster, more accurate and more efficient steam generator tube inspection and repair through redundant tube identification, intuitive graphic screen controls and seamless interface with all repair processes and eddy current examinations.



### Challenge

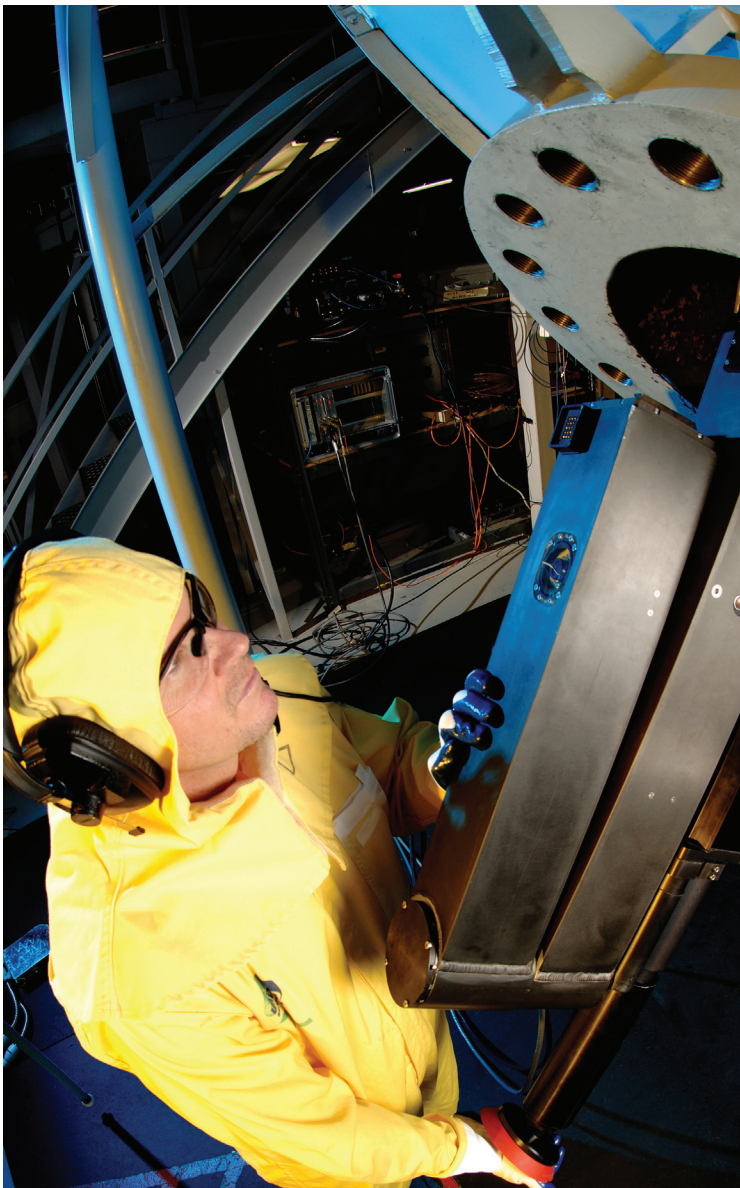
To optimize outage performance while reducing schedule and dose, plants need a proven approach for Steam Generator Non-Destructive Examination (NDE) and repair.

### Solution

Utilizing our global experience and incorporating NDE best practices, we designed Framatome's RANGER robotic manipulator to be quick in setup and exact in positioning, ensuring smooth, fast and accurate remote eddy current testing of steam generator tubes, preserving outage schedules and budget.

### Customer benefits

- One-piece design remains folded until installed in steam generator for use
- Manway reach allows for quick low-dose tool change
- Fully intuitive graphic screen controls, coupled with eddy current acquisition software, allows inspection to progress smoothly with minimal burden to operator
- Manipulator has a walker option
- Compact control-box design allows for plugging or the addition of audio/video plug-in modules within a small platform footprint
- Performs eddy current inspection automatically from a programmed tube inspection list
- Can return to previous inspection candidates in seconds — even in a distant quadrant, allowing faster closeout
- Seamlessly interfaces with all eddy current and repair processes



## Redundant Tube Identification Meets EPRI Guidelines

RANGER's integrated machine vision system recognizes tubes as they enter the arm camera field of view. Tool-tip position is calculated and compared to previous coordinates determined by the arm encoders, ensuring positioning accuracy and rapid access to areas of interest. This completely redundant and independent approach to tube ID verification virtually eliminates the possibility of improper tube encoding.

## Set up, Inspect and Leave Site Quickly

- Lightweight arm installation can be completed by one platform worker in less than 10 minutes, reducing exposure to one-third of that needed for previous manipulators
- Preserves your schedules during busy outage seasons
- Saves time and dose, reduces peripheral equipment and customer requirements for site support

**Your performance**  
is **our** everyday **commitment**

---

**Contact:**  
[examination@framatome.com](mailto:examination@framatome.com)  
[www.framatome.com](http://www.framatome.com)

The data and information contained herein are provided solely for illustration and informational purposes and create no legal obligations by Framatome. None of the information or data is intended by Framatome to be a representation or a warranty of any kind, expressed or implied, and Framatome assumes no liability for the use of or reliance on any information or data disclosed in this document. Property of Framatome or its affiliates. © 2025 Framatome Inc.  
A0118-PS\_US\_G-EN-272\_06-25-Ranger