

CASE STUDY

Spot at Japan's Fukushima Daiichi nuclear plant

Spot helps Fukushima decommissioning team survey hazardous, radioactive areas and plan for the future



TEPCO

“The decommissioning work at Fukushima Daiichi is still ongoing and it is easy to imagine that there will be many more situations where Spot can be used. We greatly look forward to its future activities.”

—Tokyo Electric Power Company Holdings (TEPCO)

OVERVIEW

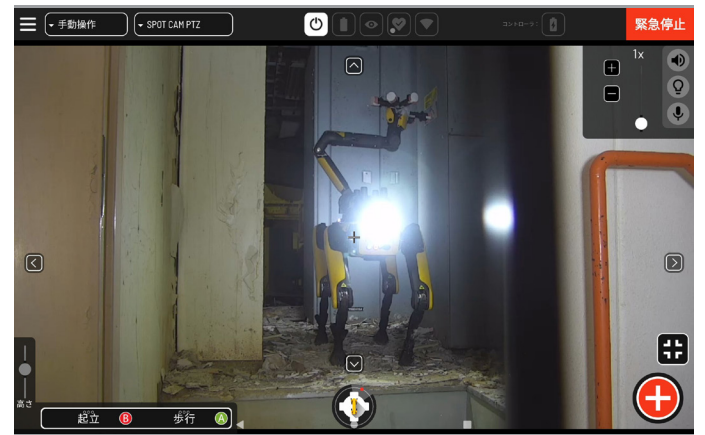
A devastating earthquake and tsunami in 2011 caused three nuclear meltdowns at Japan's Fukushima Daiichi nuclear plant. More than a decade later, much of the facility remained unexplored. Decommissioning teams had to wear bulky PPE and limit time spent in radioactive areas. Officials tried using ground-based robots to explore the facility, but the machines struggled to climb stairs and navigate through debris. This hampered data collection and slowed the decommissioning process to a crawl.

SOLUTION

Boston Dynamics' Spot robot revitalized the Fukushima decommissioning process. Through rigorous pre-testing, Spot proved it could withstand the high levels of radiation expected inside the nuclear plant. Spot's four-legged mobility and arm allowed it to traverse debris-filled areas and open doors that hadn't been touched since the disaster. Spot collected data, recorded video, measured radiation, and gathered debris samples.

OUTCOMES

Spot offered a groundbreaking approach to assessing the hazardous conditions within the Fukushima facility. Spot's ability to autonomously navigate dangerous areas and collect critical data—while minimizing human exposure to radiation—was unprecedented. The essential data Spot gathered has aided in strategic planning for the cleanup and helped officials prioritize future decommissioning steps. “A robot with excellent mobility—one that can move freely inside the building and is easy to communicate with—was required for this project,” said Koji Watanabe, a Deputy Manager with Tokyo Power Technology. “Spot was exactly what we needed.”



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