

Japan robot suit offers hope for nuclear work

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A robot suit entitled HAL (Hybrid Assistive Limb) is displayed at the Japan Robot Week exhibition in Tokyo. The brain wave-controlled robot suits that allow wearers to don heavy radiation protection without feeling the weight were unveiled in Japan.

Brain wave-controlled robot suits that allow wearers to don heavy radiation protection without feeling the weight were unveiled in Japan on Thursday.

Researchers showed off the latest incarnation of HAL, the [Hybrid Assistive Limb](#), a full body suit that could eventually be used by workers dismantling the crippled Fukushima nuclear plant.

HAL—coincidentally the name of the evil supercomputer in Stanley Kubrick's "2001: A Space Odyssey"—has a network of sensors that monitor the [electric signals](#) coming from the wearer's brain.

It uses these to activate the robot's limbs in concert with the worker's, taking weight off his or her muscles.

Yoshiyuki Sankai, professor of engineering at the University of Tsukuba, said this means the 60-kilogramme (130-pound) tungsten vest workers at Fukushima have to wear is almost unnoticeable.

He said the outer layer of the [robot suit](#) also blocks radiation, while fans inside it circulate air to keep the wearer cool, and a computer can monitor their heart-rate and breathing for signs of fatigue.

The robot is manufactured by Cyberdyne, a company unrelated to the fictional firm responsible for the Terminator in the 1984 film of the same name.

HAL was on display as part of Japan Robot Week, which also featured small robots that run on caterpillar tracks designed to move across difficult terrain and gather information in places where it is not safe for humans.

Inventor Eiji Koyanagi of the Chiba Institute of Technology said the devices could be deployed very close to the damaged [reactor core](#) at Fukushima.

"We have to think of ways to protect nuclear workers, otherwise Fukushima won't be sorted out," he said.

A huge tsunami in March 2011 smashed into the power plant, sparking meltdowns that forced the evacuation of a huge area of northeastern Japan.

The decommissioning of the crippled plant is expected to take several decades.

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