Japan firm unveils robot suit for nuclear workers

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University of Tsukuba professor Yoshiyuki Sankai wears a robot suit entitled HAL (Hybrid Assistive Limb), with a 60kg anti radiation jacket, in Tsukuba city, Ibaraki prefecture. The Japanese maker of an exoskeleton robot suit to assist walking on Monday unveiled a model that could help nuclear workers weighed down by heavy anti-radiation vests in contaminated zones.

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Cyberdyne, based northeast of Tokyo, demonstrated an upgraded version of the robot device called the Hybrid Assistive Limb, or HAL, that can be worn under anti-radiation tungsten vests as heavy as 60 kilogrammes (132 pounds).

Lightweight Tyvek protective outfits can provide a barrier between radioactive materials and the body, but are not effective in blocking radiation itself.

Vests made of tungsten can block radiation but are very heavy, making it difficult for workers to take on long shifts at highly contaminated sites, Cyberdyne noted.

"This new type of HAL robot suit supports the weight of tungsten-made protective clothing and enables their wearers to work on the site without feeling the burden," the company said in a statement.

"It is hoped that this will reduce risks of working under harsh environments and contribute to early restoration operations by humans in the wake of disasters," it said.

The massive earthquake and tsunami of March 11 sparked an atomic emergency at the Fukushima Daiichi plant operated by Tokyo Electric Power Co. (TEPCO) in the northeast of the country.

Efforts to contain the worst nuclear disaster since Chernobyl in 1986 are still continuing, with high levels of radiation hampering operations.

More than 2,000 employees of TEPCO and other companies are working at the plant on weekdays with the number falling on weekends, according to the plant operator.

It has not been decided whether the new robot suit will be used in work to contain the situation at the Fukushima plant.

HAL gives power to its wearer by anticipating and supporting the user's body movements using sensors monitoring electric signals sent from the brain to the muscles.

The company had already leased the lower-limb version of the battery-powered suit to 113 hospitals, welfare and other facilities by the end of October.

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