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Fuel Removal From Fukushima's Reactor 4 Threatens 'Apocalyptic' Scenario. Radiation Fuel Rods Matches Fallout of 14,000 Hiroshima Bombs

By Common Dreams
Global Research, October 25, 2013
CommonDreams.org

Region: Asia
Theme: Environment

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An operation with potentially "apocalyptic" consequences is expected to begin in a little over two weeks from now – "as early as November 8" – at Fukushima's damaged and sinking Reactor 4, when plant operator TEPCO will attempt to remove over 1300 spent fuel rods holding the radiation equivalent of 14,000 Hiroshima bombs from a spent fuel storage tank perched on the reactor's upper floor.

Fukushima Reactor 4

While the Reactor 4 building itself did not suffer a meltdown, it did suffer a hydrogen explosion, is now tipping and sinking and has zero ability to withstand another seismic event.

The Japan Times explained:

> To remove the rods, TEPCO has erected a 273-ton mobile crane above the building that will be operated remotely from a separate room.
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> […] spent fuel rods will be pulled from the racks they are stored in and inserted one by

> one into a heavy steel chamber while the assemblies are still under water. Once the chamber is removed from the pool and lowered to the ground, it will be transported to another pool in an undamaged building on the site for storage.
>
> Under normal circumstances, such an operation would take little more than three months, but TEPCO is hoping to complete the complicated task within fiscal 2014.

A chorus of voices has been sounding alarm over the never-been-done-at-this-scale plan to manually remove the 400 tons of spent fuel by TEPCO, who so far has been responsible for mishap after mishap in the ongoing crisis at the crippled nuclear plant.

Arnie Gundersen, a veteran U.S. nuclear engineer and director of Fairewinds Energy Education, warned this summer that "They are going to have difficulty in removing a significant number of the rods," and said that "To jump to the conclusion that it is going to work just fine is quite a leap of logic." Paul Gunter, MD, Director of the Reactor Oversight Project with Takoma Park, Md.-based Beyond Nuclear, also sounded alarm on Thursday, telling *Common Dreams* in a statement that "Given the uncertainties of the condition and array of the hundreds of tons of nuclear fuel assemblies, it will be a risky round of highly radioactive pickup sticks." Gundersen offered this analogy of the challenging process of removing the spent fuel rods:

> If you think of a nuclear fuel rack as a pack of cigarettes, if you pull a cigarette straight up it will come out — but these racks have been distorted. Now when they go to pull the cigarette straight out, it's going to likely break and release radioactive cesium and other gases, xenon and krypton, into the air. I suspect come November, December, January we're going to hear that the building's been evacuated, they've broke a fuel rod, the fuel rod is off-gassing. […]
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> I suspect we'll have more airborne releases as they try to pull the fuel out. If they pull too hard, they'll snap the fuel. I think the racks have been distorted, the fuel has overheated — the pool boiled – and the net effect is that it's likely some of the fuel will be stuck in there for a long, long time.

The Japan Times adds:

> Removing the fuel rods is a task usually assisted by computers that know their exact location down to the nearest millimeter. Working virtually blind in a highly radioactive environment, there is a risk the crane could drop or damage one of the rods — an accident that would heap even more misery onto the Tohoku region.

As long-time anti-nuclear activist Harvey Wasserman explained, the

> Spent fuel rods must be kept cool at all times. If exposed to air, their zirconium alloy cladding will ignite, the rods will burn and huge quantities of radiation will be emitted. Should the rods touch each other, or should they crumble into a big enough pile, an explosion is possible.

"In the worst-case scenario," *RT* adds,

> the pool could come crashing to the ground, dumping the rods together into a pile that could fission and cause an explosion many times worse than in March 2011.

Wasserman says that the plan is so risky it requires a global take-over, an urging Gunter also shared, stating that the "dangerous task should not be left to TEPCO but quickly involve the oversight and management of independent international experts."

Wasserman told *Common Dreams* that

> The bring-down of the fuel rods from Fukushima Unit 4 may be the most dangerous engineering task ever undertaken. Every indication is that TEPCO is completely incapable of doing it safely, or of reliably informing the global community as to what's actually happening. There is no reason to believe the Japanese government could do much better. This is a job that should only be undertaken by a dedicated team of the world's very best scientists and engineers, with access to all the funding that could be needed.
>
> The potential radiation releases in this situation can only be described as apocalyptic. The cesium alone would match the fallout of 14,000 Hiroshima bombs. If the job is botched, radiation releases could force the evacuation of all humans from the site, and could cause electronic equipment to fail. Humankind would be forced to stand helplessly by as billions of curies of deadly radiation pour into the air and the ocean.

As dire as Wasserman's warning sounds, it is echoed by fallout researcher Christina Consolo, who told *RT* that the worst case scenario could be "a true apocalypse." Gunter's warning was dire as well.

"Time is of the essence as we remain concerned that another earthquake could still topple the damaged reactor building and the nuclear waste storage pond up in its attic," he continued. "This could literally re-ignite the nuclear accident in the open atmosphere and inflame it into hemispheric proportions," said Gunter.

Wasserman says that given the gravity of the situation, the eyes of the world should be upon Fukushima:

> This is a question that transcends being anti-nuclear. The fate of the earth is at stake here and the whole world must be watching every move at that site from now on. With 11,000 fuel rods scattered around the place, as a ceaseless flow of contaminated water poisoning our oceans, our very survival is on the line.

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