Correspondence on the New Photo of Reactor Unit no. 4 at Fukushima

February 21, 2012

This letter is now available in Japanese.

Dear Akio –
This photo is quite sobering. As you know the pool at Unit No. 4 contains 1,538 fuel assemblies, including a full core that was freshly discharged prior to the accident.

The Fourth Reactor at Fukushima on February 20, 2012. The yellow area is the containment vessel. --The Asahi Shimbum Digital

As I might have mentioned, based on data from the U.S. Department of Energy, a spent fuel assembly from a typical boiling water reactor contains about 30,181 curies (~1.1E+15 becquerels) of long-lived radioactivity. So the Unit No. 4 pool contains roughly 49 million curies (~1.8E+18 Bq), of which about 40 percent if Cs-137. (Source: U.S. Department of Energy, Final Environmental Impact Statement, for a Geologic Repository for the

Disposal of Spent Nuclear Fuel and High-Level Radioactive Waste at Yucca Mountain, Nye County, Nevada, 2002, Appendix A, Tables A-7, A-8, A-9, A-10, BWR/ Burn up = 36,600 MWd/MTHM, enrichment = 3.03 percent, decay time = 23 years.)

As you know, the risk of yet another highly destructive earthquake occurring even closer to the Fukushima reactors has increased, according to the European Geosciences Union. This is particularly worrisome for Daiichi's structurally damaged spent fuel pool at Reactor No. 4 sitting 100 feet above ground, exposed to the elements. Drainage of water from this pool, resulting from another quake could trigger a catastrophic radiological fire involving about eight times more radioactive cesium than released at Chernobyl.

Best Regards,

Bob Alvarez