ISOTOPE SUPPLY

ENERGY DEPARTMENT MOLYBDENUM PLAN FALTERING

Isotope production slated for April will be delayed indefinitely following an emergency scram and the discovery of leaking coolant.

PLANS BY THE U.S. DEPARTment of Energy to make molybdenum-99 for nuclear medicine are faltering amid management and equipment failures at the Los Alamos National Laboratory, the government weapons lab in New Mexico where the DOE is outfitting a small nuclear reactor for radioisotope production. Initial shipments of ^{99}Mo, originally promised this month, will be delayed indefinitely, according to the department's Office of Isotope Production and Distribution.

"We're not in a position to even guesstimate what the consequences will be–whether it's weeks, months, or perhaps longer I can't say," says IP&D Director Donald E. Erb.

Due to threatened disruptions over the last two years at the sole North American supplier of ^{99}Mo, anxious nuclear medicine professionals in the U.S. have vigorously backed the DOE plan. Technetium-99m radiopharmaceuticals, compounded from ^{99}Mo-^{99m}Tc generators, are used in an estimated 90% of all nuclear medicine procedures.

Troubles at Los Alamos began on December 11, after what a lab press release euphemistically calls an "operational problem"—the operator mistakenly allowed the Omega West reactor to surge above the allowed power level of eight megawatts, which triggered an emergency shut-down, or scram.

The scram itself would have only required lab managers to complete a safety check and institute new operating procedures. But on January 30 workers coincidentally discovered that the reactor coolant system was losing water at the rate of three gallons per hour, apparently having sprung a leak.

Tests of surface water drainage around the reactor turned up one sample with 2.5 times more tritium than allowed by standards for drinking water set by New Mexico and the Environmental Protection Agency.

After draining part of the water in the 16,500 gallon primary cooling system, workers at Los Alamos have managed to isolate the faulty section. The leak is somewhere along a 20-30 ft. underground passage of a "delay line" leading from the reactor core to the cooling tower. The delay line slows the flow of coolant to allow short-lived radioisotopes time to decay before the water reaches the heat exchangers in the cooling system.

The precise location of the leak is still not known, nor the cause, whether it be corrosion or a bad weld, so estimates of the repair cost remain sketchy. Alex Gancarz, head of the lab's isotope and nuclear chemistry division told a local newspaper that the cost could reach $1.5 million. Mr. Gancarz and Mr. Erb have expressed concern that the DOE hierarchy might deem the costs too expensive to follow through with repairs and restart the reactor.

Industry Losing Interest

Radiopharmaceutical makers have all but written off the DOE program. "It's gone dead pretty much," says Alan F. Herbert, president of Medi-Physics, Inc., a unit of Amersham. Along with Medi-Physics, Du Pont Merck Pharmaceutical Co. and Mallinckrodt Medical, Inc. each chipped in $40,000 at the beginning of the DOE venture. The companies hoped to gain a source in addition to the near-monopoly supplier Nordion International, Inc., but the collaboration unraveled when Mallinckrodt announced plans to produce ^{99}Mo in the Netherlands and Du Pont signed an exclusive long-term contract with Nordion.

Mr. Herbert of Medi-Physics says his company is satisfied that Nordion has put in place a "stronger" program, including backup capacity at a reactor facility in Belgium. "I believe that Nordion has made inroads into backing up their reactor capability. From that standpoint I feel better," he says. Mr. Herbert and representatives of other drug companies still say they would welcome the Energy Department as an alternate supplier.

Success or failure of IP&D plans for ^{99}Mo production now "really depends on how soon the DOE lets Don Erb get the Omega West reactor operating again," says a knowledgeable industry observer, who believes that the technical problems at the reactor could be overcome in a few weeks, were it not for the "sluggish bureaucracy" of the government labs.

The Omega West Reactor, built primarily for conducting neutron activation analysis, is run by the weapons program at Los Alamos. As director of IP&D, Mr. Erb does not control the reactor, but his program has to pay a large chunk of the operating costs. IP&D, a program with no funding other than revenue from isotope sales, has run up several million dollars worth of debt gambling on the success of the ^{99}Mo production effort. ■