



**NUCLEAR PROLIFERATION
PREVENTION PROJECT**

October 13, 2021

NNSA Office of Conversion
U.S. Department of Energy

Re: Supply of Molybdenum-99 (Mo-99) Produced Without the Use of Highly Enriched Uranium (HEU)

Dear Office of Conversion,

This submission responds to the *Federal Register* notice of October 5, 2021, in which “DOE is seeking public input” to determine whether “there is a sufficient supply of Mo-99 produced without the use of HEU available to meet U.S. patient needs,” in order to certify implementation of the 2012 nonproliferation law halting further HEU exports for production of Mo-99.

All four of the major foreign producers of Mo-99 – Curium in the Netherlands; IRE in Belgium; ANSTO in Australia, and NTP in South Africa – have developed and qualified LEU targets, which they use to produce Mo-99.

One of these producers, IRE, temporarily has continued to receive U.S. exports of HEU for targets to produce I-131, and also has extracted Mo-99 from these targets. However, the U.S. Nuclear Regulatory Commission declared in a ruling of April 13, 2020, that “IRE should finish converting its facility to use LEU targets by June 2022, at which point it will be able to use LEU targets” for all production.¹ The NRC at the same time issued a license through December 31, 2021, for export of HEU for use in targets at IRE, intended as sufficient for production through June 2022.² Based on these facts, no further U.S. license to export HEU for use in targets is needed for foreign production of Mo-99. Moreover, domestic producers do not utilize HEU targets. This means that all U.S. demand for Mo-99 will be satisfied by domestic and foreign production that avoids use of HEU targets.

Accordingly, the Secretary of Energy and the Secretary of Health and Human Services must certify, “that there is a sufficient supply of Mo-99 produced without the use of HEU available to meet U.S. patient needs,” thereby triggering the statutory prohibition on further HEU exports for use as targets to produce Mo-99. The national security imperative of this decision is underscored by the NRC, which states that, “unnecessary HEU exports (e.g., if demand can be met by other producers using alternative material or if too much HEU is requested) pose an increased risk of diversion and weapons proliferation that would not exist but for the export, which in turn raises inimicality concerns for the U.S. common defense and security.”³

Sincerely,

Alan J. Kuperman
NPPP Coordinator
Associate Professor, LBJ School of Public Affairs

¹ U.S. NRC, CLI-20-02, Memorandum and Order, April 13, 2020, 17.

² XSNM-3810, April 13, 2020.

³ U.S. NRC, CLI-20-02, 26.