



National Nuclear Security
Administration (NNSA)

Defense Nuclear
Nonproliferation (DNN)

U.S. Views on Global Progress Towards Implementation of Full-Cost Recovery for Mo-99 Production

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Progress in FCR Implementation

- OECD/NEA has extensively documented that achieving full-cost recovery (FCR) across the Mo-99 supply chain is vital for a secure supply.
- OECD/NEA has developed a detailed guide for FCR implementation.
- Governments of all countries with major Mo-99 production have made commitments on FCR implementation.
- Some progress has been made in implementing FCR.

$$\text{Full Cost for } ^{99}\text{Mo} = wA + \gamma_m(x_r B + C) + zD + E$$

Where:

A = Capital costs

B = General overhead costs of the entire site

C = General operational costs of the reactor

D = Decommissioning

E = Specific ^{99}Mo irradiation costs

Source: *Guidance Document: Full-cost Recovery for Molybdenum-99 Irradiation Services: Methodology and Implementation*, OECD/NEA, NEA/SEN/HLGMR(2012)9, Feb. 2012

WE COMMIT, with the aim of jointly promoting an internationally consistent approach to ensuring the long-term secure supply of medical radioisotopes, to implement the HLG-MR principles in a timely and effective manner, and to:

- Take co-ordinated steps, within our countries' powers, to ensure that ^{99}Mo or $^{99\text{m}}\text{Tc}$ producers and, where applicable, generator manufacturers in our countries implement a verifiable process for introducing full-cost recovery at all facilities that are part of the global supply chain for $^{99\text{m}}\text{Tc}$;

Source: *Joint Declaration on the Security of Supply of Medical Radioisotopes*, OECD/LEGAL/0409, Dec. 2014



Challenges in FCR Implementation

- A verifiable process for implementing FCR across the global supply chain has not been established.
- The most recent OECD/NEA assessment on FCR implementation was over five years ago and was negatively impacted by non-responses from some market participants.
- It appears that a significant portion of the Mo-99 being imported into the United States is still priced at an artificially low level, below FCR, due to foreign government subsidies.
- Artificially low prices have delayed efforts by new U.S. producers to enter the Mo-99 market and add capacity and technological diversity to the global supply chain.



Recommended Next Steps

- Governments involved in Mo-99 production should renew and prioritize implementation of our commitments under the 2014 Joint Declaration, especially as related to FCR.
- The Mo-99 supply chain should consider a new approach to verifying FCR implementation:
 - Some supply chain participants are reluctant to provide information verifying their implementation of FCR to a third party because of commercial sensitivities.
 - Many supply chain participants already use third-party accounting firms to provide auditing and other services.
 - Supply chain participants should consider a new FCR verification mechanism in which companies would expand the scope of their existing audits by third-party accounting firms to include assessment of FCR implementation.
 - The third-party accounting firm would provide a letter documenting their findings that could be shared with OECD/NEA or more broadly.
- The United States is eager to work with the OECD/NEA and other supply chain participants on this or other approaches for FCR implementation.