Radioactive Sources:
Applications and Alternative Technologies

Bonnie D. Jenkins, *Chair*

Committee Meeting #1
January 30-31, 2020

The National Academies of
SCIENCES • ENGINEERING • MEDICINE

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STATEMENT OF TASK

The National Academies will appoint an ad hoc committee of experts to carry out principal tasks

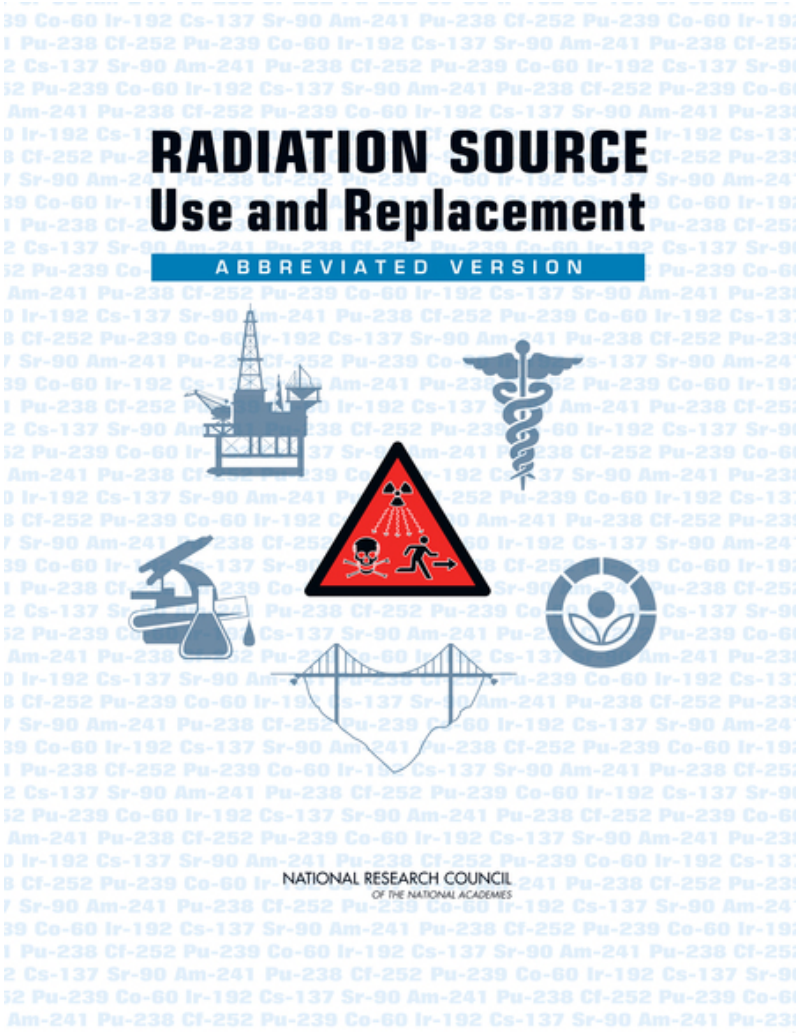
- to **review** (using the 2008 National Academies report "Radiation Source: Use and Replacement" as a baseline) the **current industrial, research, and commercial (including medical) applications of** radioactive sources, including **Categories 1, 2, and 3 sources** as defined by the International Atomic Energy Agency's "Categorization of Radioactive Sources," IAEA-TECDOC-1344; and

- to **identify uses** for which a radioactive source can be replaced with an equivalent (or improved) **non-radioisotope alternative technologies** that are **already available** in the market and could **become available** in the market as next-generation or emerging technologies in the next 10 years, and assess applications for which alternative technologies **do not currently exist**, but which could significantly mitigate the risk associated with current technologies using high-risk radionuclides.

STATEMENT OF TASK (cont.)

The assessment will examine **domestic and international** developments in radioactive source applications and feasible alternative technologies. In addition, the assessment will use criteria to assess the overall technical feasibility and maturity of those technologies, including the Department of Energy Technology Readiness Level (TRL). Moreover, the assessment of alternative technologies will evaluate their attractiveness and practicality to organizations in consideration of adopting or transitioning to them.

About the 2008 Study



- Congressionally mandated and sponsored by the U.S.NRC
- The most important recommendation was for "**Government action … to implement replacement" of CsCl radioactive sources**.
- This report and the main recommendation have influenced government programs (especially NNSA's ORS' Cesium Irradiator Replacement Program) and congressional legislation on phasing out CsCl blood irradiators.
- Over 5,250 downloads from Academies Press website; top 4% of all Academies products.

➢ Broad international reach to 126 countries

Why a New Study?

1. **10+ year update**
2. **Include Category 3 sources**
3. **International perspectives**

STUDY SCHEDULE

- Study start date: October 2019
- Information gathering and report development: January 2020-February 2021 (anticipate 6 committee meetings)
- Report review: March 2021
- Public release: May 2021

Meeting #1 Goals

- To receive input and perspectives from the sponsor, federal agencies, and other stakeholders on the statement of task
- Deliberate in closed session how to tackle the statement of task and create a workplan (i.e., meeting topics and locations)

QUESTIONS, COMMENTS, OR SUGGESTIONS?

Please contact us:

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