

Why GAO Did This Study

DOE is the only domestic supplier for many of the over 300 different isotopes it sells that are critical to medical, commercial, research, and national security applications. Previous shortages of some isotopes, such as helium-3, an isotope used to detect radiation at seaports and border crossings, highlight the importance of managing supplies of and demand for critical isotopes. Prior reports by GAO and others highlighted risks and challenges faced by the Isotope Program, such as assessing demand for certain isotopes. GAO was asked to determine (1) which isotopes are produced, sold, or distributed either by the Isotope Program or NNSA and how the two agencies make isotopes available for commercial and research applications; (2) what steps the Isotope Program takes to provide isotopes for commercial and research applications; and (3) the extent to which DOE is assessing and mitigating risks facing the Isotope Program. GAO reviewed DOE and NNSA documents, visited Oak Ridge National Laboratory, and interviewed cognizant agency officials.

What GAO Recommends

GAO recommends, among other actions, that DOE's Isotope Program define what factors it considers when setting isotope prices, create clear objectives as a basis for risk assessment, and consolidate the lists of high-priority isotopes. DOE stated that it will address GAO's recommendations through the Isotope Program's current efforts to update its pricing policy and develop a strategic plan.

MANAGING CRITICAL ISOTOPES

DOE's Isotope Program Needs Better Planning for Setting Prices and Managing Production Risks

What GAO Found

The Department of Energy's (DOE) Isotope Development and Production for Research and Applications program (Isotope Program) provides over 300 different isotopes for commercial and research applications. The Isotope Program is responsible for 243 stable isotopes that are no longer produced in the United States but are sold from the program's existing inventory and for 55 radioactive isotopes, called radioisotopes, that the program is able to produce at DOE facilities. An additional 10 isotopes sold by the Isotope Program are provided by the National Nuclear Security Administration (NNSA), a separate agency within DOE, as by-products of its nuclear weapons program.

The Isotope Program may be forgoing revenue that could further its mission because of the manner in which it sets prices for commercial isotopes. The Isotope Program determines demand, coordinates production, and sets prices for commercial isotopes. To set prices for radioisotopes, the program considers the full cost of production, including direct costs (e.g., labor costs) and indirect costs (e.g., infrastructure costs). For research applications, isotope prices are set to recover direct costs to reduce prices and encourage research. For commercial applications, prices are set at full cost recovery—of both direct and indirect costs—or at an isotope's market price when a market price higher than full cost recovery already exists. The program, however, has not fully assessed the pricing of most of these isotopes, as required by its 1990 pricing policy. This policy provides latitude for setting prices and states that prices should be assessed annually. Factors that may be considered when establishing prices include the value of an isotope to the customer, demand, and the number of suppliers. The program, however, has not assessed the value of isotopes to customers or defined what factors it will consider when it sets prices for commercial isotopes, including defining under what circumstances it will set prices at or above full cost recovery. As a result, the program does not know if its full-cost-recovery prices are set at appropriate levels so as not to distort the market, and it may be forgoing revenue that could further support its mission.

The Isotope Program has begun taking some actions to identify and manage risks to achieving its mission of producing isotopes, but because it has not established clear, consistent program objectives, the program's risk assessment efforts are not comprehensive. Actions the Isotope Program is taking include, among other things, identifying high-priority isotopes and using its revolving fund to mitigate risks from unforeseen events. For example, the Isotope Program has identified five lists of high-priority isotopes—those at risk of supply problems because they are already in short supply or are important to users. Isotope Program officials reported using these lists to set program priorities. The Isotope Program is taking these actions, however, without first establishing clear, consistent objectives. The federal standards for internal control state that a precondition to risk assessment is the establishment of clear objectives. Without clearly defined objectives, the program cannot be assured that it is assessing risks from all sources or that its efforts are focusing on the most significant risks to achieving its mission. Furthermore, without consolidating the multiple high-priority lists, Isotope Program managers may not be directing limited resources to the most important isotopes.