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NUCLEAR SCIENCE

Status of DOE's
Self-Supporting Isotope
Program

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Mr. Chairman and Members of the Subcommittee:

We are pleased to be here today to discuss our recent report on the Department of Energy's (DOE) Isotope Production and Distribution (IP&D) Program. This report describes the difficulties that the program is having in becoming a self-supporting enterprise. It is one in a series of reports recently prepared at your request concerning DOE's civilian nuclear complex.¹ Our testimony today will update the material presented in our report and provide information on steps that DOE has recently taken to enhance the viability of its isotope program.

In summary, as you know, isotopes are important tools for use in medical treatments, industrial applications, and scientific research. Although DOE's isotope program is relatively small, it is an important domestic source of isotopes. However, we found that DOE faces significant obstacles in attempting to operate the program on a self-supporting basis. Essentially, DOE cannot recoup the costs of its isotope operation through revenues from isotope sales. As a result, its original operating fund of \$16 million has been depleted, and DOE is currently relying on borrowed funds to keep the program solvent. High, uncontrollable operating costs, lack of capital funding, and foreign competition--much of it subsidized--have been the primary obstacles to operating the program on a self-sufficient basis.

Since we issued our report, DOE has employed a consulting firm to help redesign its isotope program. One of this firm's main tasks will be to help DOE define its role in the isotope area. After the consulting firm completes its work, the firm and DOE will identify funding options for financing this role. However, according to DOE the program will most likely require some amount of appropriated funds to be viable. We believe that if DOE had completed such a study before reorganizing its isotope program in 1989, many of the problems that we identified in our report may have been avoided.

The remainder of my statement will focus in more detail on the difficulties that the program is having and the efforts that DOE has made to resolve some of these difficulties. However, before I move to this discussion, I will provide you with some background information on the isotope program.

¹DOE's Self-Supporting Isotope Program Is Experiencing Problems (GAO/RCED-92-122FS, June 3, 1992); Fast Flux Test Facility on Standby, Awaiting DOE Decision on Future Missions (GAO/RCED-92-121FS, Apr. 9, 1992); and Monitoring Improved, but More Planning Needed for DOE Test and Research Reactors (GAO/RCED-92-123, July 15, 1992).

PROGRAM BACKGROUND

DOE's role in the isotope sales market has declined over the past 45 years. DOE's annual isotopes sales, which have been on the order of \$15 million, represent about 3 percent of the world's isotope business. Nonetheless, DOE is considered an important supplier within the United States, since most of the isotopes that it produces are not otherwise available domestically or have a limited backup source for their supply.

DOE produces both stable isotopes and radioisotopes. Stable isotopes are naturally occurring and are not radioactive. Radioisotopes are radioactive--they are unstable forms of elements that decay or disintegrate, emitting radiation. Radioisotopes are produced in nuclear reactors or particle accelerators. Stable isotopes, which represent the majority of DOE's business, are processed in equipment dedicated to isotope processing called calutrons. Both types of isotopes are used in many disciplines for numerous purposes, including the treatment of disease, industrial applications, and basic research.

DOE reorganized its isotope program in 1989 to centralize the management of isotope production and sales under the Office of Isotope Production and Distribution. In its fiscal year 1990 budget request, DOE, at the urging of the Office of Management and Budget, requested that an IP&D revolving fund be established to put the program on a totally self-supporting basis. The fund was approved by the Congress and IP&D began operating on a totally self-supporting basis starting in fiscal year 1990. The program began with an operating fund of \$16 million that was to be replenished through revenues from isotope sales.

DOE'S ISOTOPE PROGRAM IS EXPERIENCING DIFFICULTIES

Each year since initiating a policy of complete self-sufficiency, program costs have exceeded revenues from isotope sales. The program has depleted its \$16 million operating fund and is currently borrowing from the Treasury to meet operating expenses. IP&D program officials acknowledge that a number of factors have limited their success in establishing a self-sustaining isotope program, including the program's inability to control and/or afford production costs, competition in the market place, and lack of capital funds to expand and improve program operations.

Control and Affordability of Production Costs

IP&D cannot control production costs of radioisotopes at nondedicated production sites and cannot afford to operate and maintain its dedicated production facilities for stable isotopes.

The IP&D program has no reactor or accelerator that is currently dedicated solely to producing radioisotopes. IP&D is merely a customer at DOE's facilities and is charged according to the amount and location of the space used. Although IP&D can anticipate these charges, it is subject to other charges it cannot control. For example, the cleanup of a contamination incident related to the production and delivery of cesium sources resulted in repeated cost overruns and unplanned delays in the delivery of isotopes to customers and additional costs in excess of \$2 million to the IP&D revolving fund. IP&D recently discontinued its development of cesium because runaway processing costs were hastening the program's impending insolvency. The cesium operations may be restarted if IP&D is able to negotiate lower production costs and higher prices with prospective buyers.

To process stable isotopes, IP&D uses facilities called calutrons that are dedicated solely to this activity. IP&D is responsible for all the costs of operating, maintaining, and upgrading these dedicated facilities. The program cannot currently afford to operate these facilities continuously because it cannot recoup the cost of sustained operation through isotope sales. Consequently, DOE shut down the calutrons in August 1991. Nevertheless, the isotope program must pay an annual cost of about \$2.5 million to maintain the calutrons in a ready-to-restart condition. According to the Program Director, the IP&D program cannot afford this cost. The program is currently drawing down existing inventories of stable isotopes to meet customers' demands. DOE's customers are concerned because isotope inventories are being depleted and no apparent effort is being made to replenish them. IP&D program officials are currently pursuing several funding options, including urging the DOE division that funded the calutrons before the isotope program's reorganization in 1989 to take back responsibility for the cost of the calutrons. In addition, IP&D officials hope to persuade major pharmaceutical companies to sign long-term contracts for stable isotopes.

Effect of Market Competition

After more than 2 years' experience, IP&D officials have found that competition in the isotope market makes it difficult for them to establish a full cost recovery program and still sell their isotopes at competitive prices. Many domestic isotope customers have found that foreign suppliers offer lower prices and/or better availability and have shifted their business to these suppliers. IP&D program officials claim that most of these foreign suppliers are subsidized by their government and can therefore offer lower prices. To recover costs fully, IP&D officials have had to raise prices for many isotopes, making IP&D less competitive. According to these officials, competition from foreign suppliers contributed to a shortfall of about \$4.5 million in IP&D program revenues in fiscal year 1991.

Lack of Capital Funding

The IP&D operating fund does not have capital to invest in either equipment or research. Program officials told us that the program cannot afford improvements, upgrades, repairs, or purchases of new equipment. After more than 2 years' experience, program officials have concluded that the program's initial capitalization of \$16 million was much too low to maintain and upgrade the isotope program.

Likewise, the IP&D program is not currently providing funds for research on new isotopes. Laboratory officials and isotope users told us that isotope research is needed to meet a growing demand for both new medical isotopes for therapy and new diagnostic isotopes. Isotope research was previously funded by the Office of Energy Research. However, since the reorganization and centralization of isotope activities, the IP&D program has been responsible for funding most isotope research. Program officials said that the program does not have the capacity to sponsor isotope research.

PURSUIT OF SOLUTIONS TO PROBLEMS

In April 1992, we discussed our report with DOE officials, including the IP&D Program Director and DOE's Chief Financial Officer. These officials acknowledged that the isotope program was failing to support itself. DOE officials have since taken some actions to keep the program solvent and to redesign the program.

Steps Taken to Maintain Program Solvency

Program officials have borrowed funds, discontinued one expensive operation, and collected a past debt from another DOE division to help IP&D continue operations. Program officials had previously obtained borrowing authority for Treasury loans up to \$8.5 million to develop isotopes. Program officials recently used over \$2 million of this authority to finance operating expenses so that the program would remain solvent. According to these officials, enough borrowing authority remains for IP&D to pursue new isotope production in 1993. They said that they have authority to borrow additional funds in fiscal year 1993 and may ask for appropriated funds for fiscal year 1994.

Program officials have also, for now, discontinued their development of cesium which was costing the program millions of dollars. In addition, program officials told us that another division within DOE that had some isotope inventory belonging to the program from before the reorganization has now agreed to pay \$2 million over the next 2 years for these isotopes.

Study Underway to Redesign
the Isotope Program

DOE has engaged the management consulting firm of Arthur Andersen and Company to help it develop solutions to the isotope program's problems. The consulting firm will help DOE determine what the scope of its program should be and identify options for financing it. In addition, the firm will look at the possible advantages of privatizing parts of the DOE isotope program. According to DOE, this study, which began in July, is expected to take 6 months to complete. DOE plans to use the results of this study to redesign its program. IP&D program officials believe that this redesigned program may have to be financed with some combination of isotope sales' revenues and appropriated funds. Because of the difficulties already discussed, these officials have concluded that it is impossible for DOE to have a completely self-supporting isotope production and distribution program.

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Mr. Chairman, this concludes my prepared testimony. We would be pleased to respond to any question you or Members of the Subcommittee may have.

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