draft EA and comments received, the Department decided that it would be appropriate to prepare an Environmental Impact Statement.

Within DOE, the ACRR at SNL/NM and its associated hot cell facilities are managed by the Office of Defense Programs because the principal use of these facilities has been to support defense research needs. There is a defense-related experiment in progress in the ACRR that is scheduled to be completed in mid-August 1995. Beyond that, the Office of Defense Programs has not currently identified any follow-on work; however, the ACRR must be available to support DP missions in time of emergency for national security reasons. DOE has not yet decided on any specific other uses for the ACRR, although a range of activities are possible for a reactor of this type. These activities could involve other DOE program areas besides the production of Mo-99 and related medical isotopes, as well as work performed for other agencies or organizations, such as the past work performed for the Nuclear Regulatory Commission. In the interim, DOE will physically maintain the reactor, hot cells and associated facilities, and will continue to train the operating staff to maintain their proficiency to meet safe operating standards. DOE will also complete installation of a new control system designed to meet today's standards. In addition, SNL/NM will clean out ''legacy'' waste materials that remain, principally in the hot cells and storage areas adjacent to the reactor.

Proposed Action

The proposed action is for DOE to establish within two years a medical radioisotope production program that would ensure the domestic capability to produce a continual supply of Mo-99 and related medical isotopes (iodine-125, iodine-131, and xenon-133) for United States medical community use. The near-term goal of DOE is to provide a backup capability to supply a baseline production level of 10 to 30 percent of current United States demand for Mo-99 and 100 percent of the United States demand should the Canadian source be unavailable. The baseline production level would serve to maintain the capabilities of the facilities and staff to respond on short notice to supply the entire United States demand on an as-needed basis. The longer term objective is to transfer the process to private industry.

The United States demand is presently about 3,000 6-day curies per week; a 6-day curie is defined as the amount of product, measured in curies, remaining 6 days after the product arrives on the radiopharmaceutical manufacturer's dock. The pharmaceutical manufacturers also require that the specific activity of the product must be at least 10,000 curies of activity per gram of molybdenum when it arrives at the manufacturer's dock.

Proposed Process

DOE proposes to use the Cintichem process as the most expeditious way to satisfy the goals of the proposed action. A brief description of the steps in the process follows.

As the initial step in the proposed Mo-99 production program, targets containing highly enriched uranium would be fabricated, tested and shipped to the reactor facility for irradiation. Target elements would be manufactured by electroplating highly enriched uranium oxide on the inner wall of stainless steel tubes, and then sealing the ends with custom fittings.

At the reactor facility, the targets would be irradiated for several days depending on the power level. Upon removal from the reactor, the irradiated targets would be transferred in a shielded cask to an appropriate hot cell facility, preferably located immediately adjacent to or near the reactor facility because of the short half-life of Mo-99. Within the hot cells, the isotopes of interest would be extracted from the fission product inventory by chemical dissolution and precipitation procedures. The isotopes would be further refined and would undergo strict quality control procedures to meet FDA standards.

Because Mo-99 decays at the rate of about 1 percent per hour, all steps after irradiation of the target and shipment of the product must be expedited. The isotopes would be packaged in Department of Transportation-approved packaging for shipment by air freight on a daily basis to any of the three currently known potential customers: DuPont-Merck in Boston, Massachusetts; Amersham Mediphysics in Chicago, Illinois; and Mallinckrodt in St. Louis, Missouri. Air express class shipments would be used.

The radioactive waste would be both low-level waste (LLW) and spent nuclear fuel. Both types of waste would be managed, stored and eventually disposed of in accordance with applicable requirements and regulations.

Although no mixed waste (waste that is both radioactive and chemically hazardous) would be generated in the isotope extraction process, small amounts of mixed waste would be produced during target fabrication. These mixed waste streams would be managed, stored and disposed of in accordance with applicable requirements and regulations.

During the preparation of the EIS, the Department will conduct laboratory-scale process validation tests to help ensure that the Cintichem process can be accurately reproduced. The results of these tests would be applicable to any site for Mo-99 production using the Cintichem process.

Alternatives

DOE has identified a number of alternatives for the production of Mo-99. Others may be identified during the scoping process. All alternatives will be evaluated against the purpose and need for the proposed action, and those that meet the goals of the proposal will be addressed in detail in the EIS. At this time, DOE's preferred alternative is to use the Cintichem process with Mo-99 target fabrication in the CMR at LANL and target irradiation and isotope separation in the ACRR and associated hot-cell facilities at SNL .

No Action

The Council on Environmental Quality regulations implementing NEPA require that an agency analyze the impacts of not taking the proposed action (the ''No Action Alternative''). In this case, the No Action Alternative would mean that DOE would not establish a backup production capability for Mo-99. The United States medical community would continue to rely on the current Canadian source, or other foreign sources, of radioisotopes.

Alternatives to Accomplish the Proposed Action

There are several existing federally-owned facilities that could be configured to produce Mo-99 and other medical isotopes. Previous studies which narrowed the possible alternatives to a single reactor facility, the ACRR, will be revisited and re-evaluated. Possible additional DOE facilities include:

(1) Omega West Reactor at LANL
(2) Advanced Test Reactor at the Idaho National Engineering Laboratory (INEL)
(3) High Flux Isotope Reactor at the Oak Ridge National Laboratory (ORNL)

The possibility of using non-DOE federally-owned facilities will also be examined.

Alternatives to the Proposed Action

There may be ways to accomplish the goal of the proposed action (i.e., establish a source for the domestic