

production of Mo-99) that would use private rather than federally-owned facilities. However, some or all of these alternatives would not be able to meet this goal within the time desired. The alternatives identified below, as well as others which may be identified in the scoping process, will be considered.

(1) *University Reactors*: Several United States universities currently operate research reactors, which are typically small and relatively simple. They also typically do not have hot cell facilities or radio-chemical process facilities. However, in some cases, university reactors have already produced other radioisotopes, and they will be re-evaluated. Universities which have reactor facilities that are of particular interest are listed below:

- The University of Missouri.
- Rhode Island Nuclear Science Center.
- Georgia Institute of Technology.
- Massachusetts Institute of Technology.

(2) *New Concepts*: New concepts which have been proposed for the production of Mo-99 will be considered. Examples of these new concepts include:

- *Medical Isotope Production Reactor (MIPR)*: The Babcock and Wilcox Corporation (B&W) has submitted an unsolicited proposal to DOE to design, construct and operate a new and unproven reactor concept that uses an aqueous solution of uranyl nitrate contained in an aluminum or stainless steel vessel immersed in a large pool of water to provide both shielding and heat exchange. The reactor could be operated with low-enriched fuel. The Mo-99 would be obtained by on-line extraction of a portion of the uranyl nitrate and passing it through an ion exchange column, where the Mo-99 would be deposited. The uranyl nitrate would then be returned to the reactor. Wastes could be substantially reduced with this concept. B&W believes that a MIPR Mo-99 facility could be run as a profitable business. However, to date, the perceived risks have prevented them from making a corporate commitment to fund such an enterprise without substantial government support.

- *Isotopes U.S.A.*: Personnel from DOE's Idaho National Engineering Laboratory (INEL) and the University of Idaho have developed a concept, referred to as Isotopes U.S.A. Under this concept, a not-for-profit corporation would be established dedicated to education, research and other scientific purposes relevant to the production and use of stable and radioactive isotopes. The concept includes isotope production and distribution, isotope

research, education and training, administration and for-profit isotope ventures. This concept, should it be implemented, could privatize most, if not all, of the current IPDP functions, including the production of Mo-99.

#### *Partial Alternatives*

Some alternatives to meet individual portions of the proposed action will be considered in combination with other appropriate processing and irradiation facilities.

Examples are: (1) *Alternative Target Fabrication Sites*: Alternate target fabrication sites include DOE facilities at LANL, SNL/NM, or ORNL or commercial facilities such as Babcock and Wilcox in Lynchburg, Virginia; Nuclear Fuel Services in Erwin, Tennessee; and General Atomics in San Diego, California. Any alternate fabrication site would manufacture the same target using the selected process.

(2) *Alternate Target Processing Sites*: Some hot cell facilities may be more effective for post-irradiation processing than the hot cells that are near a candidate reactor, although such arrangements would have to consider the short half-life of Mo-99. Also, if the targets were fabricated at the same facility where the post-irradiation processing is done, there would be the potential that unfissioned uranium from the targets could be recycled back into new targets.

#### **Preliminary Identification of Environmental Issues**

The issues listed below have been tentatively identified for analysis in the Medical Isotope Production EIS. This list is presented to facilitate public comment on the scope of the EIS. It is not intended to be all-inclusive or to predetermine the potential impacts of any of the alternatives. DOE seeks public comment on the adequacy and inclusiveness of these issues:

- (1) Potential impacts on natural ecosystems, including air quality, surface and ground water quality, and plants and animals;
- (2) Potential health and safety impacts to on-site workers and to the public resulting from operations, including reasonable postulated accidents;
- (3) Potential health and safety, environmental and other impacts related to the transport of targets and radioisotopes;
- (4) Waste management considerations related to the generation, storage and disposal of hazardous waste, LLW, mixed waste and spent nuclear fuel;
- (5) Potential cumulative impacts of Mo-99 production operations, including relevant impacts from other past present

and reasonably foreseeable activities at the production site;

(6) Potential impacts on cultural resources;

(7) Potential socioeconomic impacts, including any disproportionate impacts on minority and low income populations; and

(8) Potential economic impacts, including those from producing radioisotopes for commercial sector use.

#### **Related NEPA Documentation**

NEPA documents that have been or are being prepared for activities related to the proposed action include, but are not limited to, the following:

(1) The LANL Site Wide EIS (a Notice of Intent was published at 60 FR 25697, May 12, 1995) will analyze the cumulative impacts of operations and planned activities foreseen at LANL within the next 5 to 10 years.

(2) An Environmental Assessment for SNL/NM Offsite Transportation of Low-Level Radioactive Waste is currently being prepared which will evaluate the shipment of both existing inventories of LLW accumulated at SNL/NM since 1988 and LLW projected to be newly generated at SNL/NM in the foreseeable future.

(3) The Programmatic Environmental Impact Statement for Waste Management will address waste management alternatives for existing and proposed actions and DOE complex-wide issues associated with long-term waste management policies and practices. An Implementation Plan for this Programmatic EIS was issued in January 1994.

(4) The Programmatic Environmental Impact Statement for Spent Nuclear Fuel Management and Idaho National Engineering Laboratory Environmental Restoration and Waste Management addresses the management of DOE-owned spent nuclear fuel. A Record of Decision for the Programmatic EIS was published in the **Federal Register** on June 1, 1995.

#### **Public Involvement Opportunities**

DOE will develop a public ("stakeholder") involvement plan for this EIS process. To assist with developing the stakeholder involvement plan, the DOE requests suggestions by the public on how this EIS process should be conducted, including suggestions regarding the type, format, and conduct of public involvement opportunities.

Through this notice, the DOE formally invites States, tribes, other government agencies, and the public to comment on the scope of this EIS. The locations,