A continuous, reliable supply of medical radioisotopes is essential; any change in production methods must ensure that patient needs are not compromised.

Opportunities for Future US Production of Medical Radionuclides:

The need is greater than ever for new reactor capacity to assure an adequate supply of Mo-99 and other medical radionuclides. Two of the most promising potential new sources are discussed below.

University of Missouri Research Reactor Center (MURR)

- Activated League of Medical Radiotracers Production; MURR could soil approximately 65% of the current need for Mo-99 with no change to the current reactor. The reactor can produce 600 activity with a 10% efficiency. MURR could also help in the use of medical radioisotopes.
- Physical Plant: Currently, MURR is equipped with the technology to produce Mo-99, but the reactor must be modified to produce the Mo-99.
- Funding: Funding may be available from the DOE or other sources.

- B&W is already investing, and will work with a pharmaceutical partner and private investors. The overall cost estimate is less than $100 million, including research and development. Not looking for government funding.
- Five-year timeline starting this past February. Currently in discussions with NRC regarding the early phases of the license process. Current nuclear reactor manufacturer is PWR (Pressurized Water Reactor).
- Projected to be on line by 2012.

- Other issues:
  - Regulations do not specifically address Aqueous Homogeneous Reactors, so licensing under current regulation may require clarifications. New regulations may become necessary to appropriately address this relatively low hazard type of reactor.
- B&W will continue to work on the concept of using Aqueous Homogenous Reactors with LEU fuel, could supply 50% of the US market using these 350 Mo-99 units. Production costs is estimated to be $100 million. B&W plans to work with FDA to optimize the machine will first need to be built, then operated, and then material can be tested and submitted to FDA for approval. B&W plans to work with FDA to optimize the machine will first need to be built, then operated, and then material can be tested and submitted to FDA for approval. B&W plans to work with FDA to optimize the machine will first need to be built, then operated, and then material can be tested and submitted to FDA for approval.