



ENCLOSURE 4

Basis for Submittal of the Standard Review Plan as a Topical Report

The submittal of the, “Atomic Alchemy Conformance to the Standard Review Plan” as a topical report takes exception to the NRC LIC-500, Basic Requirements 4.2, Criteria B for submittal of a topical report based on the following:

Public Interest

Atomic Alchemy intends to design, procure, construct, and operate a Non-Power Production and Utilization Facility (NPUF) with the purpose of producing Molybdenum-99 (Mo-99), among other radioisotopes. Deployment of an NPUF will accomplish three significant objectives that are considered national priorities and of great interest and concern to the public.

First, it will help alleviate the ongoing Mo-99 supply crisis that has resulted from operational interruptions at reactors abroad which produce Mo-99. Second, it will result in a long-term domestic supply of Mo-99 to reduce the U.S. dependency on foreign suppliers. Third, it will result in a Mo-99 supply that does not rely on the use of highly enriched uranium.

Precedent

The NRC has previously reviewed licensee topical reports involving design approaches. These were submitted to the NRC for the purpose of obtaining NRC review and a determination of acceptability for use in establishing the licensee’s design and licensing basis.

Atomic Alchemy’s design approach to utilize NUREG-0800, “Standard Review Plan for the Review of Safety Analysis for Nuclear Power Plants” is similar to the design approach utilized by both Shine Medical Technologies and Northwest Medical Isotopes LLC. While NUREG-0800 is not directly applicable to NPUF facilities it does present the basis for more concise acceptance criterion to develop a SAR and meet applicable Title 10 regulations for a Part 50 construction license.

Increase Efficiency

The prior approval of the Atomic Alchemy Standard Review Plan compliance will facilitate increase efficiency of the review of the Atomic Alchemy construction application and PSAR Submittal under 10 CFR Part 50. The early determination and subsequent agreement of applicable Title 10 regulations to the principle design criteria and the methodology of how Atomic Alchemy will demonstrate compliance is extremely important to providing appropriate quality to the safety-related aspects of the design.

An early NRC review and approval of this design approach and design concepts will result in a greater degree of regulatory certainty and will ensure that the construction application review process can proceed in an efficient and timely manner.