

# DOE-ID NEPA CX DETERMINATION

**SECTION A. Project Title: Refurbishment of Co-60 Source in Penn State Gamma Irradiator – Pennsylvania State University**

**SECTION B. Project Description**

Pennsylvania State University proposes to procure and install a quantity of <sup>60</sup>Co sufficient to allow irradiation dose rates up to 2Mrads/hour, or >100 krad/hour at the end of an additional 20 years of use. The new cobalt pencils will be loaded into the source holder, which has already been characterized and used for past irradiations. The depleted pencils will be transferred to a secondary, low-dose irradiator in order to facilitate lower-dose irradiations for which the upgraded source activity is too strong. The facility has been performing gamma irradiation for over 50 years. A state broad-scope license amendment will be required to receive the amount of cobalt to be ordered, however, the facility has previously been able to accommodate quantities of the proposed magnitude.

**SECTION C. Environmental Aspects / Potential Sources of Impact**

Radioactive Material Use/Radioactive Waste Generation – This proposal is for the purchase and installation of Co-60 for use in an existing in-pool irradiator. The old cobalt pins will be retained on-site and used in a secondary, low-dose irradiator. The action would not create additional environmental impacts above those already occurring at the university.

**SECTION D. Determine the Level of Environmental Review (or Documentation) and Reference(s):** Identify the applicable categorical exclusion from 10 CFR 1021, Appendix B, give the appropriate justification, and the approval date.

Note: For Categorical Exclusions (CXs) the proposed action must not: 1) threaten a violation of applicable statutory, regulatory, or permit requirements for environmental, safety, and health, including requirements of DOE orders; 2) require siting and construction or major expansion of waste storage, disposal, recovery, or treatment facilities; 3) disturb hazardous substances, pollutants, contaminants, or CERCLA-excluded petroleum and natural gas products that pre-exist in the environment such that there would be uncontrolled or unpermitted releases; 4) adversely affect environmentally sensitive resources. In addition, no extraordinary circumstances related to the proposal exist which would affect the significance of the action, and the action is not “connected” nor “related” (40 CFR 1508.25(a)(1) and (2), respectively) to other actions with potentially or cumulatively significant impacts.

References: B1.31 Installation or relocation and operation of machinery and equipment (including, but not limited to, laboratory equipment, electronic hardware, manufacturing machinery, maintenance equipment, and health and safety equipment), provided that uses of the installed or relocated items are consistent with the general missions of the receiving structure. Covered actions include modifications to an existing building, within or contiguous to a previously disturbed or developed area, that are necessary for equipment installation and relocation. Such modifications would not appreciably increase the footprint or height of the existing building or have the potential to cause significant changes to the type and magnitude of environmental impacts.

B3.6 Siting, construction, modification, operation, and decommissioning of facilities for small-scale research and development projects; conventional laboratory operations (such as preparation of chemical standards and sample analysis); and small-scale pilot projects (generally less than 2 years) frequently conducted to verify a concept before demonstration actions, provided that construction or modification would be within or contiguous to a previously disturbed or developed area (where active utilities and currently used roads are readily accessible). Not included in this category are demonstration actions, meaning actions that are undertaken at a scale to show whether a technology would be viable on a larger scale and suitable for commercial development.

Justification: The activity consists of purchasing and installing new cobalt pencils for conducting nuclear energy-related research and development and educational purposes.

Is the project funded by the American Recovery and Reinvestment Act of 2009 (Recovery Act)  Yes  No

Approved by Jason Sturm, DOE-ID NEPA Compliance Officer on 7/10/2018.