

DOE-ID NEPA CX DETERMINATION

SECTION A. Femtosecond Laser Ablation Machining & Examination – Center for Active Materials Processing (FLAME-CAMP) – University of California, Berkeley

SECTION B. Project Description

The University of California, Berkeley (UC Berkeley) proposes develop a femtosecond laser ablation-based characterization tool for irradiated materials, primarily irradiated fuel rods. Therefore, this system will be designed for hot cell applications and radioactive specimens. The precision and power of modern lasers enables an accurate and high throughput evaluation of specimens. The combination of non-contact (reduced contamination), rapid removal rates, and direct measurement of localized elemental composition and thermal conductivity make FLAME-CAMP valuable for post-irradiation examination (PIE) of irradiated fuel rods.

SECTION C. Environmental Aspects / Potential Sources of Impact

Radioactive Material Use / Radioactive Waste Generation / Chemical Use/Storage / Chemical Waste Disposal / Hazardous Waste Generation – UC Berkeley has valid site licenses to work with radioactive materials issued by the State of California. They have an active and well-regarded radioactive materials program which is frequently reviewed. The same applies to chemical work and waste generation. All waste generated will be disposed of through campus channels following all federal and state guidelines.

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: 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.

B1.24 Property transfers: Transfer, lease, disposition, or acquisition of interests in personal property (including, but not limited to, equipment and materials) or real property (including, but not limited to, permanent structures and land), provided that under reasonably foreseeable uses (1) there would be no potential for release of substances at a level, or in a form, that could pose a threat to public health or the environment and (2) the covered actions would not have the potential to cause a significant change in impacts from before the transfer, lease, disposition, or acquisition of interests.

Justification: The activity consists of an investigation into post irradiation examination of irradiated fuel rods.

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 8/12/2020