

DOE-ID NEPA CX DETERMINATION

Idaho National Laboratory

SECTION A. Project Title: HFEF Precision Mill Upgrades to Support Rodlet Re-fabrication

SECTION B. Project Description and Purpose:

MFC is developing capabilities to fabricate new fuel rodlets from existing fuel rods, a process termed rodlet "re-fabrication." This process requires sectioning a longer rodlet, removing the exposed pellets to make room for an endcap to be press-fit in, facing and de-burring the ends, and cleaning the surface to prepare the rodlet for welding, including removing the oxide layer. End caps will be machined out-of-cell to match the cleaned rodlet ends to tight tolerances.

To support this work, the Precision Mill is being upgraded to allow it to bore out fuel pellets and perform other machining tasks for re-fabrication. These upgrades will include a 4th axis on the mill, as well as a collection system to capture fuel shavings during machining.

Currently there is no way to weld end caps on fuel rodlets or seal weld or pressurize the rodlets on irradiated fuels in HFEF. Cutting rods to length and defueling may be performed using existing in-cell equipment such as the mini-mill. A demonstration of this capability is pending. Modification to the existing equipment, or development of new equipment may be required for cutting and defueling depending on the results of the demonstration.

SECTION C. Environmental Aspects or Potential Sources of Impact:

Air Emissions

Upgrades to the precision mill to support rodlet re-fabrication in HFEF is not a modification with Idaho Administrative procedures Act (IDAPA) 58.01.01.201 or 40 Code of Federal Regulation (CFR) 61 Subpart H. Air emission and work scope are consistent with pre-project conditions. All radiological emissions are monitored and recorded through the HFEF continuous stack monitor. For perspective, historic emissions from the HFEF stack, over the last 12-years have ranged between 7.01 E-07 and 1.39 E-07 mrem/yr.

Discharging to Surface-, Storm-, or Ground Water

N/A

Disturbing Cultural or Biological Resources

HFEF is eligible for listing on the National Register of Historic Places (NRHP), and all project activities associated with the building must undergo cultural resource review (CRR).

Generating and Managing Waste

During the demonstration work it is expected that small amounts of common trash and construction-related waste such as scrap metal will be generated. All scrap metal will be recycled to the extent practicable. Once the precision mill is upgraded or if any additional new equipment is required within the HFEF hot cell for the cutting and defueling, small amounts of RHLLW or CHLLW will be generated. Collection devices will capture fuel shavings during milling as accountable material that will be collected and handled through Safeguards and Security. Once this material is terminated it will then be transferred to WGS for disposition.

Releasing Contaminants

All chemicals typically used will be managed in accordance with laboratory procedures. All chemicals and associated Safety Data Sheets (SDS's) must be submitted in the vendor data system for approval. The Chemical Coordinator would track these chemicals in the INL Comply Plus Chemical Management System. Chemical use has a potential for small air emissions and spills. In the event of a spill, notify MFC Environmental staff. If the MFC Environmental Manager cannot be contacted, report the release to the Spill Notification Team (208-241-6400). Clean up the spill and turn over spill cleanup materials to Waste Generator Services.

Using, Reusing, and Conserving Natural Resources

All material will be reused and/or recycled where economically practicable. All

applicable waste would be diverted from disposal in the landfill when possible. Project personnel would use every opportunity to recycle, reuse, and recover materials and divert waste from the landfill when possible. The project would practice sustainable acquisition, as appropriate and practicable, by procuring materials that are energy efficient, water efficient, are bio-based in content, environmentally preferable, non-ozone depleting, have recycled content, and are non-toxic or less toxic alternatives.

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SECTION D. Determine Recommended Level of Environmental Review, Identify Reference(s), and State Justification: Identify the applicable categorical exclusion from 10 Code of Federal Regulation (CFR) 1021, Appendix B, give the appropriate justification, and the approval date.

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, or similar requirements of Department of Energy (DOE) or Executive Orders; (2) require siting and construction or major expansion of waste storage, disposal, recovery, or treatment or facilities; (3) disturb hazardous substances, pollutants, contaminants, or Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)-excluded petroleum and natural gas products that pre-exist in the environment such that there would be uncontrolled or unpermitted releases; (4) have the potential to cause significant impacts on environmentally sensitive resources (see 10 CFR 1021). In addition, no extraordinary circumstances related to the proposal exist that would affect the significance of the action. In addition, the action is not "connected" to other action actions (40 CFR 1508.25(a)(1)) and is not related to other actions with individually insignificant but cumulatively significant impacts (40 CFR 1608.27(b)(7)).

References:

10 CFR 1021, Appendix D, Item B1.31, "Installation or relocation of machinery and equipment".

Justification:

The proposed project is consistent with CX 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.

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

Approved by Jason Anderson, DOE-ID NEPA Compliance Officer on: 03/11/2021