

DOE-ID NEPA CX DETERMINATION

SECTION A. Project Title: Ferritic Martensitic Alloys as Accident Tolerant Fuel Cladding Material for Light Water Reactors – GE Global Research

SECTION B. Project Description

The GE Global Research (GE-GRC) team, which includes the University of Michigan, Los Alamos National Laboratory, and Global Nuclear Fuels, will demonstrate the feasibility that ferritic materials will be suitable for fuel cladding material in current light water reactors as accident tolerant fuel. The objective is to show feasibility that traditional and nano-structured ferritic/martensitic alloys are candidate materials for fuel cladding in light water reactors. Studies will be conducted in parallel with current zirconium alloys cladding materials.

SECTION C. Environmental Aspects / Potential Sources of Impact

Radioactive Material Use – Testing will be performed on three or four irradiated test specimens with low dose levels. GE-GRC has the ability to work with irradiated specimens and has a radiation health board that reviews the work and ensures that all regulatory requirements are met, standard operating procedures are developed and appropriate sample and waste handling procedures exist.

Chemical Use/Storage – Testing at GE-GRC will involve the use of small amounts of chemicals for cleaning, etching, and establishing testing water chemistry.

Chemical Waste Disposal – GE-GRC has established waste disposal procedures to ensure appropriate handling and disposal of chemical waste. Small amounts of chemical waste will be generated.

Water/Well Use – Recirculated cooling tower water will be used for testing. Small amounts of deionized water will be used to make up testing water will be used to make up testing water chemistry.

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.

Justification: The activity consists of evaluating light water reactor fuel for research purposes.

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

Approved by Jack Depperschmidt, DOE-ID NEPA Compliance Officer on 9/25/2012

Filename: 1aDOE-ID-12-048 GE EC B3-6.doc
Directory: N:\DOEXWEB\NEPA
Template: C:\Documents and
Settings\schlme\Desktop\word_files\templates\form_outline.dot
Title: DATE
Subject:
Author: Mary Bates
Keywords:
Comments:
Creation Date: 9/27/2012 9:47:00 AM
Change Number: 4
Last Saved On: 9/27/2012 4:32:00 PM
Last Saved By: sturmjr
Total Editing Time: 132 Minutes
Last Printed On: 9/28/2012 8:22:00 AM
As of Last Complete Printing
Number of Pages: 1
Number of Words: 593 (approx.)
Number of Characters: 3,383 (approx.)