

DOE-ID NEPA CX DETERMINATION

SECTION A. Project Title: CFA-16-12043: Using Radioiodine Speciation to Address Environmental Remediation and Waste Stream Sequestration Problems at the Fukushima Daiichi Nuclear Power Plant and a DOE Site, MS-EM-1: Radioactive Waste Management – Texas A&M University - Galveston

SECTION B. Project Description

Texas A&M University - Galveston proposes to 1) measure radioiodine speciation to provide information that will be used in the development of species-specific stabilization technologies. The systems include cement waste, tank simulant, ALPS waste streams, and Fukushima groundwater, 2) develop stabilization strategies, including sorbents and carbonate coprecipitation, 3) evaluate further the most effective sorbents, including batch tests, column tests, standard diffusion tests, spectroscopy, and microscopy. Also a multi-year field demonstration will be conducted at an existing radionuclide field test-bed facility, and 4) develop an engineering tool for designing treatment systems.

SECTION C. Environmental Aspects / Potential Sources of Impact

Radioactive Material Use – will use about 1 microCurie of the short-lived isotopes of radioiodine during the three years of this study.

Radioactive Waste Generation – It is estimated that approximately 15L/yr of non-hazardous radioactive liquid waste/year, assuming 500 samples/yr. It is also anticipated that 0.3 kg of solid waste (labware, glassware, cement, soil, vanadium pentoxide) will be generated. The university Environmental Safety and Health Department performs waste pick-up and disposal in accordance with State of Texas regulations.

Mixed Waste Generation – It is anticipated that 0.5 L of mixed waste (I-125 & I-131/cyclohexane/chloroform/sodium 2-iodosobenzoate) will be generated. The handling of this waste is treated separately, but in a similar manner as described for the Radioactive Waste Generation.

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 research activities on iodine speciation for developing waste management and environmental remediation strategies.

Approved by Jack Depperschmidt, DOE-ID NEPA Compliance Officer on 06/29/2016