Categorical Exclusion Determination Form

Project Title: Activities in 135 Hydrogen Research Technology Laboratory

Program or Program Office: Savannah River Site

Location: Aiken South Carolina

Project Description:

The Materials Technology Section is establishing scanning probe microscopy (SPM) and fuel cell / battery testing capabilities in HTRL. Initial SPM testing will be on metal coupons or polymer specimens. Fuel cell and / or battery testing will be completed on single cell proton exchange membranes. Water electrolysis for the generation of hydrogen and oxygen will be completed. Polymer membranes for battery applications will be synthesized. Catalysts will be synthesized to test performance for various catalytic reactions. A gas-chemisorption instrument will be used to characterize synthesized materials. Once operational, the instruments will be used to support several SRNL programs and potential off-site work. Work will also be completed on the synthesis of ionic liquids and nanoparticle enhanced ionic liquids. These materials will then be tested for thermal stability. Rev. 9 changes shown in Bold - Materials will be tested for their corrosion and fatigue behavior in the presence of ionic liquids and nanoparticle enhanced ionic liquids. The chemical and electrochemical treatment of industrial gas streams such as carbon dioxide via the use of preferential sorption materials such as ionic liquids will also be investigated.

General Administration/Management

- ☐ A1 - Routine business actions
- ☐ A2 - Administrative contract amendments
- ☐ A4 - Interpretations/rulings for existing regulations
- ☐ A5 - Regulatory interpretations without environmental effect
- ☐ A6 - Procedural rulemakings upgrade
- ☐ A7 - Transfer of property, use unchanged
- ☐ A8 - Award of technical support/M&O/personal service contracts
- ☐ A9 - Info gathering, analysis, documentation, dissemination, and training
- ☐ A10 - Reports on non-DOE legislation
- ☐ A11 - Technical advice and planning assistance construction/operation/decommissioning
- ☐ A12 - Emergency Preparedness planning well
- ☐ A13 - Procedural Orders, Notices, and Guidelines
- ☐ A14 - Approval of technical exchange arrangements
- ☐ A15 - International umbrella agreements for energy R&D

Facility Operations

- ☐ B1.2 - Training exercises and simulation
- ☐ B1.3 - Routine maintenance and custodial services
- ☐ B1.4 - Air conditioning installation for existing equipment
- ☐ B1.5 - Cooling water system improvements in existing structures
- ☐ B1.6 - Installation of runoff/spill control retention tanks and basins
- ☐ B1.7 - Communication system and data processing equipment acquisition, installation, operation, removal
- ☐ B1.8 - Screened water intake/outflow structure mods, within permits
- ☐ B1.11 - Fence installation, no adverse effect on wildlife or water flow
- ☐ B1.12 - Detonation/burning of failed/damaged high explosives or propellants in designated areas, within permits
- ☐ B1.13 - On-site pathway or short access road construction/acquisition
- ☐ B1.15 - Support building or structure, non-waste storage, const/oper
- ☐ B1.16 - Removal of asbestos in accordance with regulations
- ☐ B1.17 - Removal of PCB items from aboveground structures
- ☐ B1.18 - Water supply well const/oper, from existing field, no degradation
- ☐ B1.21 - Noise abatement
- ☐ B1.22 - Building relocation to developed area/demolition/disposal
- ☐ B1.23 - Demolition/disposal of buildings, equipment, and structures
- ☐ B1.24 - Transfer, disposition, or acquisition of uncontaminated structures or equipment, environmental quality maintained
- ☐ B1.25 - Transfer, disposition, or acquisition of uncontaminated land for habitat preservation/wildlife management
- ☐ B1.26 - Small (<250,000 GPD) WWT facility const/oper/decom
- ☐ B1.27 - Disconnection of utilities
- ☐ B1.28 - Placement of unused facilities in environmentally safe condition
- ☐ B1.29 - Small on-site const/demolition waste disposal facility const/oper/decom
- ☐ B1.30 - Transfer/transportation actions, quantities incidental to amounts at receiving site
- ☐ B1.31 - Relocation/operation of machinery or equipment, similar use
- ☐ B1.32 - Traffic flow adjustments, existing roads.

Heath and Safety

- ☐ B2.1 - Modifications to enhance workplace habitability
- ☐ B2.2 - Installation/improvement of building/equipment instrumentation
- ☐ B2.3 - Installation of equipment for personnel safety and health
- ☐ B2.5 - Facility safety and environmental improvements, replacement or of facility components

General Research

- ☐ B3.1 - Site characterization/environmental monitoring
- ☐ B3.3 - Research related to conservation of fish and wildlife
- ☐ B3.4 - Transport packaging tests for radioactive/hazardous material
- ☒ B3.6 - R&D or pilot facility
- ☐ B3.7 - New infill exploratory, experimental oil/gas/geothermal construction/operation
- ☐ B3.8 - Outdoor ecological/environmental research in small area
- ☐ B3.9 - Certain CCT demonstration activities, emissions unchanged
- ☐ B3.11- Outdoor tests, experiments on materials and equipment components, no source, special nuclear, or by-product materials

Conservation, Fossil, and Renewable Energy Activities

- ☐ B5.1 - Actions to conserve energy, no indoor air quality degradation
- ☐ B5.2 - Modification to oil/gas/geothermal pumps and piping, no flow changes, or air emission effects
- ☐ B5.3 - Modification (not expansion)/abandonment of oil storage access/ brine injection/gas/geothermal wells; no site closure
- ☐ B5.4 - Repair/replacement of pipeline sections within maintenance provisions of a Section 404 permit
- ☐ B5.5 - Short crude oil/gas/steam/geothermal pipeline const/oper within a single industrial complex/existing right-of-way
- ☐ B5.6 - Oil spill cleanup operations
- ☐ B5.12 - Workover of existing oil, gas, geothermal wells to restore production

Environmental Restoration/Waste Minimization

- ☐ B6.1 - Cleanup actions: small-scale, short-term (< $5MM and 5 years)
- ☐ B6.2 - Siting/construction/operation of temporary pilot-scale waste collection/treatment/stabilization/containment facilities
- ☐ B6.3 - Environmental control system improvements in existing structures, recycle/release/disposal within permitted facility
- ☐ B6.4 - Packaged hazardous waste storage facility const/oper/decom
- ☐ B6.5 - Const/oper/decom of on-site facility for characterizing/sorting or over packing previously packaged waste (not high-level or spent nuclear fuel; no unpacking)
- ☐ B6.6 - Modification of facility for storing, packaging, or repacking waste (not high-level or spent nuclear fuel)
- ☐ B6.8 - Minor operational changes to minimize waste or reuse materials
- ☐ B6.9 - Small-scale, temporary measures to reduce contaminated GW migration
- ☐ B6.10 - Upgraded waste storage facility (<50,000 ft) for existing waste const/oper/decom

Other

- ☐ Specify category:

*-For a Detailed Listing of DOE's Appendix A/B Subpart D of 1021 Click Here

This action would not (1) violate applicable ES&H requirements, (2) require siting of waste Treatment, Storage, Disposal or Recovery facilities, (3) disturb hazardous substances (excluding naturally occurring petroleum and natural gas), thus producing uncontrolled or unpermitted releases, and (4) adversely affect environmentally sensitive resources. Furthermore, this action (1) would not present any extraordinary circumstances such that the action might have a significant impact upon the human environment, (2) is not connected to other actions with potentially significant impacts, and (3) is not related to other actions with cumulatively significant impacts. Therefore, the proposed action may be categorically excluded from further review.

NEPA Compliance Officer: Digitally signed by Andrew R. Grainger
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Date: 2010.07.07 11:40:13 -04'00'

Date Determined: Jun 22, 2010

Comments:

TC - W - 2006 - 065, Rev.9

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