

U. S. DEPARTMENT OF ENERGY  
OFFICE OF SCIENCE -- CHICAGO OFFICE

NATIONAL ENVIRONMENTAL POLICY ACT (NEPA)  
ENVIRONMENTAL EVALUATION NOTIFICATION FORM

To be completed by "financial assistance award" organization receiving Federal funding. For assistance (including a point of contact), see "Instructions for Preparing SC-CH F-560, Environmental Evaluation Notification Form".

Solicitation/Award No. (if applicable): DE-FG02-89ER14074

Organization Name: Johns Hopkins University

Title of Proposed Project/Research: Crystal Chemistry of Toxic Metal Sequestration

Total DOE Funding/Total Project Funding: \$679,157

I. Project Description (use additional pages as necessary):

A. Proposed Project/Action (delineate Federally funded/Non-Federally funded portions):

The project uses TEM, FIB, neutron scattering and synchrotron-based X-ray techniques to investigate uranium sequestration by adsorption on surfaces and incorporation within mineral hosts. The proposed work focuses on elements of crystal chemistry important to understanding uranium sequestration and mobility in soils and rocks. There are no potentially adverse environmental effects.

B. Would the project proceed without Federal funding?

Yes  No

If "yes", describe the impact to the scope:

II. Description of Affected Environment:

There are no potentially adverse environmental effects. All work will take place entirely indoors in appropriately outfitted laboratories with low toxicity materials and in compliance with safety regulations and waste disposal policies already in place at Johns Hopkins, Argonne National Laboratory and Los Alamos National Laboratory.

Specifically: At Johns Hopkins only natural samples of uranium minerals will be used and are contained in shielded storage containers. Samples are exempt amounts of radiological materials per 10 CFR 40.13. At Argonne National Laboratory only natural samples of uranium minerals will be used. These are fully contained in doubly sealed sample holders to prevent contamination. Samples are transferred by Argonne Radiation Physics staff and remain sealed during all experiments. At Los Alamos, samples are synthetic. These samples are synthesized and analyzed entirely indoors in appropriately outfitted laboratories. Sample loading for neutron scattering experiments is done in a designated glovebox following Los Alamos National Laboratory safety protocols. Samples are small (<2 grams), low activity (contain only depleted uranium) and completely contained. All materials are surveyed to ensure no accidental spread of material. Samples will be synthesized in the Chemistry Laboratory of the Ulan Center, LANSCE, LANL TA-53.

III. Preliminary Questions:

- |  | Yes                                 | No                                  |
|--|-------------------------------------|-------------------------------------|
| A. <u>Is the DOE-funded work entirely a "paper study"?</u>   | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| <i>If "Yes", ensure that the description in Section I reflects this and go directly to Section V.</i>  |                                     |                                     |
| B. <u>Will the work to be performed take place entirely in existing buildings?</u>   | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
| <b>And NOT:</b>  |                                     |                                     |
| 1. Threaten a violation of applicable statutory, regulatory, or permit requirements for environment, safety, and health?   | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
| 2. Require the siting, construction or major expansion of waste treatment, storage, or disposal facilities?  | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
| 3. Disturb hazardous substances, pollutants, or contaminants preexisting in the environment?   | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
| 4. Adversely affect environmentally-sensitive resources identified in Section IV.A.?   | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
| 5. Be connected to another existing/proposed activity that could potentially create a cumulatively significant impact?   | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
| 6. Have an inherent possibility for high consequence impacts to human health or the environment (e.g., Biosafety Level 3-4 laboratories, activities involving high levels of radiation)? | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |

*If "Yes" to Question III.B. and ALL six subsequent questions, ensure the descriptions in Sections I and II reflect this and go directly to Section V.*

IV. Potential Environmental Effects:

**Attach/insert an explanation for each "Yes" response.**

- |  |                          |                          |
|--|--------------------------|--------------------------|
| A. <u>Sensitive Resources: Will the proposed action result in changes and/or disturbances to any of the following resources?</u> | Yes                      | No                       |
| 1. Threatened/Endangered Species and/or Critical Habitats  | <input type="checkbox"/> | <input type="checkbox"/> |
| 2. Other Protected Species (e.g., Burros, Migratory Birds)   | <input type="checkbox"/> | <input type="checkbox"/> |
| 3. Sensitive Environments (e.g., Tundra/Coral Reefs/Rain Forests)  | <input type="checkbox"/> | <input type="checkbox"/> |
| 4. Archaeological/Historic Resources   | <input type="checkbox"/> | <input type="checkbox"/> |
| 5. Important Farmland  | <input type="checkbox"/> | <input type="checkbox"/> |
| 6. Non-Attainment Areas for Ambient Air Quality Standards  | <input type="checkbox"/> | <input type="checkbox"/> |
| 7. Class I Air Quality Control Region  | <input type="checkbox"/> | <input type="checkbox"/> |
| 8. Special Sources of Groundwater (e.g. Sole Source Aquifer)   | <input type="checkbox"/> | <input type="checkbox"/> |
| 9. Navigable Air Space   | <input type="checkbox"/> | <input type="checkbox"/> |
| 10. Coastal Zones  | <input type="checkbox"/> | <input type="checkbox"/> |
| 11. Areas with Special National Designation (e.g. National Forests, Parks, Trails)   | <input type="checkbox"/> | <input type="checkbox"/> |
| 12. Floodplains and Wetlands   | <input type="checkbox"/> | <input type="checkbox"/> |
| B. <u>Regulated Substances/Activities: Will the proposed action involve any of the following regulated items or activities?</u>  | Yes                      | No                       |
| 13. Natural Resource Damage Assessments  | <input type="checkbox"/> | <input type="checkbox"/> |
| 14. Exotic Organisms   | <input type="checkbox"/> | <input type="checkbox"/> |
| 15. Noxious Weeds  | <input type="checkbox"/> | <input type="checkbox"/> |
| 16. Clearing or Excavation (indicate if greater than one acre)   | <input type="checkbox"/> | <input type="checkbox"/> |
| 17. Dredge or Fill (under Clean Water Act, Section 404, indicate if greater than ten acres)                                      | <input type="checkbox"/> | <input type="checkbox"/> |

B. Regulated Substances/Activities: Will the proposed action involve any of the following regulated items or activities? (continued)

|  | Yes                      | No                       |
|--|--------------------------|--------------------------|
| 18. Noise (in excess of regulations)                       | <input type="checkbox"/> | <input type="checkbox"/> |
| 19. Asbestos Removal                                       | <input type="checkbox"/> | <input type="checkbox"/> |
| 20. PCB's  | <input type="checkbox"/> | <input type="checkbox"/> |
| 21. Import, Manufacture, or Processing of Toxic Substances | <input type="checkbox"/> | <input type="checkbox"/> |
| 22. Chemical Storage/Use                                   | <input type="checkbox"/> | <input type="checkbox"/> |
| 23. Pesticide Use  | <input type="checkbox"/> | <input type="checkbox"/> |
| 24. Hazardous, Toxic, or Criteria Pollutant Air Emissions  | <input type="checkbox"/> | <input type="checkbox"/> |
| 25. Liquid Effluents                                       | <input type="checkbox"/> | <input type="checkbox"/> |
| 26. Underground Injection                                  | <input type="checkbox"/> | <input type="checkbox"/> |
| 27. Hazardous Waste  | <input type="checkbox"/> | <input type="checkbox"/> |
| 28. Underground Storage Tanks                              | <input type="checkbox"/> | <input type="checkbox"/> |
| 29. Radioactive Mixed Waste                                | <input type="checkbox"/> | <input type="checkbox"/> |
| 30. Radioactive Waste                                      | <input type="checkbox"/> | <input type="checkbox"/> |
| 31. Radiation Exposure                                     | <input type="checkbox"/> | <input type="checkbox"/> |
| 32. Surface Water Protection                               | <input type="checkbox"/> | <input type="checkbox"/> |
| 33. Pollution Prevention Act                               | <input type="checkbox"/> | <input type="checkbox"/> |
| 34. Ozone Depleting Substances                             | <input type="checkbox"/> | <input type="checkbox"/> |
| 35. Off-Road Vehicles                                      | <input type="checkbox"/> | <input type="checkbox"/> |
| 36. Biosafety Level 3-4 Laboratory                         | <input type="checkbox"/> | <input type="checkbox"/> |

C. Other Relevant Information: Will the proposed action involve the following?

|  | Yes                      | No                       |
|--|--------------------------|--------------------------|
| 37. Potential Violation of Environment, Safety, or Health Regulations/Permits  | <input type="checkbox"/> | <input type="checkbox"/> |
| 38. Siting/Construction/Major Modification of Waste Recovery, or Waste Treatment, Storage, or Disposal Facilities    | <input type="checkbox"/> | <input type="checkbox"/> |
| 39. Disturbance of Pre-existing Contamination  | <input type="checkbox"/> | <input type="checkbox"/> |
| 40. New or Modified Federal/State Permits  | <input type="checkbox"/> | <input type="checkbox"/> |
| 41. Public Controversy   | <input type="checkbox"/> | <input type="checkbox"/> |
| 42. Environmental Justice  | <input type="checkbox"/> | <input type="checkbox"/> |
| 43. Action/Involvement of Another Federal Agency (e.g. license, funding, approval)                                   | <input type="checkbox"/> | <input type="checkbox"/> |
| 44. Action of a State Agency in a State with NEPA-type law. (Does the State Environmental Quality Review Act apply?) | <input type="checkbox"/> | <input type="checkbox"/> |
| 45. Public Utilities/Services  | <input type="checkbox"/> | <input type="checkbox"/> |
| 46. Depletion of a Non-Renewable Resource  | <input type="checkbox"/> | <input type="checkbox"/> |
| 47. Extraordinary Circumstances  | <input type="checkbox"/> | <input type="checkbox"/> |
| 48. Connected Actions  | <input type="checkbox"/> | <input type="checkbox"/> |
| 49. Exclusively Bench-top Research   | <input type="checkbox"/> | <input type="checkbox"/> |
| 50. Only a Laboratory Setting  | <input type="checkbox"/> | <input type="checkbox"/> |

V. Financial Assistance Award Organization Concurrence:

A. Organization Official (Name and Title): Nancy Kerner, Sr. Sponsored Projects Officer

Signature: *Nancy Kerner* Date: 2/7/12

e-mail: nancyk@jhu.edu Phone: 410-516-7111

B. Optional Concurrence (Name and Title): \_\_\_\_\_

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

e-mail: \_\_\_\_\_ Phone: \_\_\_\_\_

Remainder to be completed by SC-CH

VI. SC-CH Concurrence/Recommendation/Determination:

A. SC-CH Office of Acquisition and Assistance or Office of Safety, Technical & Infrastructure Services:

Project Director or Contract Specialist (Name and Title): Jill Jonkouski Contract Specialist  
Signature: [Signature] Date: 2/9/12

B. SC-CH NEPA Team Review:

Is the project/activity appropriate for a determination or a recommendation to the Head of the Field Organization by the NEPA Compliance Officer (NCO) under Subpart D of the DOE NEPA Regulations?

Yes  No

Specific class(es) of action from Appendices A-D to Subpart D (10 CFR 1021): B3.6

Name and Title: Peter Siebach, NCO  
Signature: [Signature] Date: 2/9/2012

C. SC-CH Counsel (if necessary):

Name and Title: \_\_\_\_\_  
Signature: \_\_\_\_\_ Date: \_\_\_\_\_

D. SC-CH NEPA Compliance Officer:

The preceding pages are a record of documentation required under DOE Final NEPA Regulation, 10 CFR 1021.400.

- Action may be categorically excluded from further NEPA review. I have determined that the proposed action meets the requirements for Categorical Exclusion referenced above.
- Action requires approval by Head of the Field Organization. Recommend preparation of an Environmental Assessment.
- Action requires approval by Head of the Field Organization or a Secretarial Officer. Recommend preparation of an Environmental Impact Statement.

Comments/Limitations if necessary:

Signature: [Signature] Date: 2/9/2012  
Peter R. Siebach  
SC-CH NEPA Compliance Officer