

**U. S. DEPARTMENT OF ENERGY, OFFICE OF SCIENCE  
INTEGRATED SUPPORT CENTER—CHICAGO OFFICE**

**NATIONAL ENVIRONMENTAL POLICY ACT (NEPA)  
ENVIRONMENTAL EVALUATION NOTIFICATION FORM**

**To be completed by "Applicant," i.e., organization with responsibilities for a "Federal action" involving application to DOE for a permit, license, exemption or allocation, or other similar actions. For assistance with this Form, refer to "Instructions for Preparing ISC-CH F-560, Environmental Evaluation Notification Form."**

Solicitation/Award No. (if applicable): DE-FC02-04ER15533

Organization Name: University of Notre Dame (UND)  
Notre Dame, Indiana

Proposed Action Title: Transfer of ownership of the Radiation Research Building that houses this award titled Radiation and Photochemistry in the Condensed Phase and at Interfaces.

Total DOE Funding/Total Funding: undetermined

**I. Project Description: (Use explanation pages if additional space is required)**

**A. Proposed Project/Action (if applicable, delineate Federally funded/Non-Federally funded portions)**

Ownership of the Radiation Research Building, currently owned by the Department of Energy (DOE) and located on the UND campus, would be transferred from DOE to UND. The above-mentioned award will continue to be implemented in the building under the current cooperative agreement or a variation thereof until a later point when the building could be renovated, demolished, or decommissioned by UND.

Continuing award includes operation a laboratory to study the chemical effects of radiation on matter. Ionizing radiation (electron beams and gamma rays) and laser light would be used to initiate chemical reactions. The reactions studied are chosen for their relevance to energy technologies as well as their fundamental scientific significance. Work would be performed in the Radiation Research Building on the campus of the University of Notre Dame.

B. Would the project proceed without Federal funding? Yes  No

***If "yes," use explanation page.***

**II. Description of Affected Environment: (Use explanation pages if additional space is required)**

The Radiation Research Building occupies an area on the Notre Dame campus in the vicinity of buildings with classrooms, laboratories and the library. 7 faculty work in the building with 2 others on the project working in the building intermittently. There are also 7 postdoctoral research associates, approximately 20 students and 8 staff working in the building on the project. The building is 3 floors with a basement and penthouse, and is 70,075 square feet.

The University of Notre Dame campus is in Notre Dame, located in the north-central area of Indiana and neighboring South Bend, IN. Of the approximately 8,800 undergraduate students that attend the University, 4 out of 5 live on campus. There are also approximately 4,000 graduate/professional students and 3,000 faculty and staff that are on campus for education and work.

III. Preliminary Questions:

- |   | Yes                      | No                                  |
|---|--------------------------|-------------------------------------|
| A. <u>Is the DOE-funded work routinely administrative or <i>entirely</i> advisory or a “paper study?”</u> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

***If “Yes”, ensure that the description in Section I reflects this and go directly to Section V.***

- B. Is there any potential whatsoever for: (*Provide an explanation for each “Yes” response*)

- |  |                                     |                                     |
|--|-------------------------------------|-------------------------------------|
| 1. Work to be performed outdoors?  | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| 2. Major modification of a building interior?  | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| 3. Threat of violation of applicable statutory, regulatory, or permit requirements for environment, safety, and health?        | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| 4. Siting, construction or major expansion of waste treatment, storage, or disposal facilities?                                | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| 5. Disturbance to hazardous substances, pollutants, or contaminants preexisting in the environment?                            | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| 6. The presence of any environmentally-sensitive resources?  | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| 7. Any potential whatsoever for high consequence impacts to human health or the environment?                                   | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
| 8. The work being connected to another existing/proposed activity that could potentially create a significant impact?          | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| 9. Nearby past, present, and/or reasonably foreseeable future actions such that collectively significant impacts could result? | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| 10. Scientific or public controversy, uncertainty over potential impacts, or conflicts regarding resource usage?               | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |

***If “No” to ALL Section III.B. questions, go directly to Section V.***

IV. Potential Environmental Effects: (*Provide an explanation for each “Yes” response*)

- A. Environmentally Sensitive Resources: Could the proposed action potentially result in changes and/or disturbances to any of the following resources?

- |  | Yes                      | No                                  |
|--|--------------------------|-------------------------------------|
| 1. Threatened/Endangered Species and/or Critical Habitats                          | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 2. Other Protected Species (e.g., Burros, Migratory Birds, Pollinators)            | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 3. Sensitive Environments (e.g., Tundra/Coral Reefs/Rain Forests)                  | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 4. Cultural or Historic Resources  | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 5. Important Farmland  | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 6. Non-Attainment Areas for Ambient Air Quality Standards                          | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 7. Class I Air Quality Control Region  | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 8. Special Sources of Groundwater (e.g. Sole Source Aquifer)                       | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 9. Navigable Air Space   | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 10. Coastal Zones  | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 11. Areas with Special National Designation (e.g. National Forests, Parks, Trails) | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 12. Floodplains and/or Wetlands  | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

- B. Regulated Substances/Activities: Would the proposed action involve any of the following regulated Items or activities?

- |  |                          |                                     |
|--|--------------------------|-------------------------------------|
| 13. Natural Resource Damage Assessments  | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 14. Invasive Species or Exotic Organisms   | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 15. Noxious Weeds  | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 16. Clearing or Excavation greater than one acre or Removal of Trees Governed by Local Requirement | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 17. Dredge or Fill (under Clean Water Act, Section 404, greater than one acre)                     | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

B. Regulated Substances/Activities: Would 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 checked="" type="checkbox"/>
19. Asbestos Removal	<input checked="" type="checkbox"/>	<input type="checkbox"/>
20. Polychlorinated biphenyls (PCBs)	<input checked="" type="checkbox"/>	<input type="checkbox"/>
21. Import, Manufacture, or Processing of Toxic Substances	<input type="checkbox"/>	<input checked="" type="checkbox"/>
22. Chemical Storage/Use	<input checked="" type="checkbox"/>	<input type="checkbox"/>
23. Pesticide Use	<input type="checkbox"/>	<input checked="" type="checkbox"/>
24. Hazardous, Toxic, or Criteria Pollutant Air Emissions	<input type="checkbox"/>	<input checked="" type="checkbox"/>
25. Liquid Effluents	<input type="checkbox"/>	<input checked="" type="checkbox"/>
26. Spill Prevention/Surface Water Protection	<input type="checkbox"/>	<input checked="" type="checkbox"/>
27. Underground Injection	<input type="checkbox"/>	<input checked="" type="checkbox"/>
28. Hazardous Waste	<input checked="" type="checkbox"/>	<input type="checkbox"/>
29. Underground Storage Tanks	<input type="checkbox"/>	<input checked="" type="checkbox"/>
30. Radioactive or Radioactive Mixed Waste	<input type="checkbox"/>	<input checked="" type="checkbox"/>
31. Radiation Exposure	<input checked="" type="checkbox"/>	<input type="checkbox"/>
32. Nanoscale Materials	<input checked="" type="checkbox"/>	<input type="checkbox"/>
33. Genetically Engineered Microorganisms/Plants or Synthetic Biology	<input type="checkbox"/>	<input checked="" type="checkbox"/>
34. Ozone Depleting Substances	<input type="checkbox"/>	<input checked="" type="checkbox"/>
35. Greenhouse Gas Generation/Sustainability	<input type="checkbox"/>	<input checked="" type="checkbox"/>
36. Off-Road Vehicles	<input type="checkbox"/>	<input checked="" type="checkbox"/>
37. Biosafety Level 3-4 Laboratory	<input type="checkbox"/>	<input checked="" type="checkbox"/>
38. Research on Human Subjects or other Vertebrate Animals	<input type="checkbox"/>	<input checked="" type="checkbox"/>
39. Facility footprint exceeds 5,000 Square Feet	<input checked="" type="checkbox"/>	<input type="checkbox"/>

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

	Yes	No
40. Disproportionate Nearby Presence of Minority and/or Low Income Populations	<input type="checkbox"/>	<input checked="" type="checkbox"/>
41. Existing, Modified, or New Federal/State Permits	<input type="checkbox"/>	<input checked="" type="checkbox"/>
42. Involvement of Another Federal Agency (e.g. license/permit, funding, approval)	<input checked="" type="checkbox"/>	<input type="checkbox"/>
43. Action in a State with NEPA-type law	<input checked="" type="checkbox"/>	<input type="checkbox"/>
44. Expansion of Public Utilities/Services	<input type="checkbox"/>	<input checked="" type="checkbox"/>
45. Depletion of a Non-Renewable Resources	<input type="checkbox"/>	<input checked="" type="checkbox"/>
46. Subject to an Existing Institutional Work Planning and Control Process	<input type="checkbox"/>	<input checked="" type="checkbox"/>
47. Other Pertinent Information Which Could Impact Human Health or the Environment	<input type="checkbox"/>	<input checked="" type="checkbox"/>

V. Applicant certification that to the best of their knowledge all information provided on this form is accurate:

Does this disclosure contain: classified, sensitive business, or other exempt information that DOE would not be obligated to disclose pursuant to the Freedom of Information Act. Yes  No

A. Organization Official (Name and Title): Laura Mortlock, Assistant Director

Signature: Laura Mortlock Digitally signed by Laura Mortlock  
Date: 2022.09.22 08:52:58 -04'00' Date: 9/22/2022

e-mail: Laura.Mortlock@nd.edu Phone: 574-631-6117

B. Optional Secondary Approval (Name and Title): Anna Belote, Sr. Dir., Risk Management & Safety

Signature: Anna Belote Digitally signed by Anna Belote  
Date: 2022.09.22 09:11:00 -04'00' Date: 9/22/22

e-mail: abelote@nd.edu Phone: 574-631-8980

Remainder to be completed by DOE

VI. DOE Concurrence/Recommendation/Determination:

A. DOE Project Director/Program Manager or Contract/Grant Management Specialist:

Has the Applicant completed this Form correctly? Yes [checked] No [ ]
Does an existing generic categorical exclusion apply? [ ] [checked]

If yes, indicate: \_\_\_\_\_

Name and Title: Real Estate Contracting Officer

Signature: Susan Bourgart Digitally signed by Susan Bourgart Date: 2022.09.23 11:03:29 -05'00' Date: September 23, 2022

B. DOE NEPA Team Review (if requested):

Is the class of action identified in the DOE NEPA Regulations (Appendices A-D to Subpart D (10 CFR § 1021))? Yes [checked] No [ ]

If yes, specify the class(es) of action: B1.16, 17, 23, 24, 34; B3.1, 6; B6.1

Name and Title: \_\_\_\_\_

Signature: PETER SIEBACH Digitally signed by PETER SIEBACH Date: 2022.09.26 09:34:06 -05'00' Date: \_\_\_\_\_

C. DOE Counsel (if requested):

Name and Title: Michelle R McKown

Signature: Michelle McKown Digitally signed by Michelle McKown Date: 2022.09.22 13:22:09 -05'00' Date: 09/22/2022

D. DOE NEPA Compliance Officer:

The preceding pages are a record of documentation required under DOE Final NEPA Regulation, 10 CFR § 1021.410.

- [checked] 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 any:

NEPA Compliance Officer:

Name: \_\_\_\_\_

Signature: PETER SIEBACH Digitally signed by PETER SIEBACH Date: 2022.09.26 09:34:38 -05'00' Date: \_\_\_\_\_

Optional Additional Narrative: (add additional detail to description to Sections I and II or explanations to responses in Sections 3 and 4.

The questions above and following narrative are based on the scientific program continuing to be housed in the building.

III, B, 7: Without proper safety measures in place, many of the chemicals used in the lab can be hazardous to human health. There is also a risk of a radiation exposure from inappropriate use of the gamma irradiators and electron linear accelerators.

IV,B,19-20 Asbestos/PCBs. Two electric ballasts presumed to contain polychlorinated biphenyls (PCBs) are present, and well as a cart loaded with capacitors, presumably awaiting disposal. Areas of known and suspected asbestos-containing materials (ACM) and lead-based paint were also observed throughout the building.

IV,B,22: Chemical Storage. Organic solvents and reactants for scientific experiments are purchased as needed. Some of the more common solvents are stored on-site in a locked, separately vented room. The Radiation Laboratory has 10 chemical fume hoods for use of these chemicals. The laboratories in which the experiments are to be performed have fireproof chemical storage cabinets for their short-term storage.

IV.B.28: Hazardous Waste. The work to be performed under this cooperative agreement is chemical research. Moderate quantities of hazardous wastes, primarily organic solvents and vacuum pump oils, will be generated. The University's Office of Risk Management accepts such wastes from the Radiation Laboratory and disposes of them in accordance with Indiana and Federal regulations. Lead-based paint may be present.

IV,B, 31: Radiation Exposures. The Radiation Laboratory operates 3 electron linear accelerators and 3 cobalt-60 use-and-containment gamma irradiators. These radiation sources are used to irradiate chemical samples to initiate reactions for kinetic and product analysis. No exposure of personnel is planned in this project, and stringent measures compliant with NRC and state regulations are in place to avoid accidental exposures to personnel.

IV,B, 32: Nanoscale materials. Some of the research in this project uses nanoscale materials.

IV, B, 39: The footprint of the building is 13,930 square ft, but this project does not include development.

IV, C, 42: Involvement with another federal agency. Use of the cobalt sources in the Radiation Laboratory falls under the jurisdiction of Notre Dame's broad-scope license from the NRC.

IV, C, 43: NEPA-Type Law. The project is in compliance with Indiana's IEPA law. UND will ensure continued compliance if/as the action evolves.

In the event of a renovation or demolition, a Phase I Environmental Site Assessment (ASTM E1527) of the Radiation Research Building was completed. It may still be necessary to complete an asbestos assessment to determine other hazards of a renovation or demolition.