Environmental Review Form for Argonne National Laboratory

Form:	ANL-985
Version:	5
Your Form ID:	ANL-985-1333
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Created By:	Woodford, John B.

Creator

Badge:	**51790**	Name:	**Woodford, John B.**
Cost Center:	**254**	Division:	**WSH**
Job Title:	**Safety Specialist 5**	Employee Type:	**Regular Full-Time Exempt**
Building:	**208**	Lab Extension:	**2-0910**

General Information

Project/Activity Title: Versatile Test Reactor Hydraulic Loop
ASO NEPA Tracking No.: Type of Funding:
B & R Code: Identifying Number: NSEFY20-02
SPP Proposal Number: CRADA Proposal Number:
Work Project Number: ANL Accounting Number: (Item 3a in Field Work Proposal)
Other (explain):
List appropriate NEPA Owners:
Division: NSE NEPA Owner:

Financial Plans

To select a Financial Plan, click the magnifying glass icon to open a search window.

Cost Center: Project: Phase: Task:

Description of Proposed Action

The proposed work would involve constructing and operating a test loop to characterize pressure drop and changes in other flow parameters across model fuel holders for the Versatile Test Reactor (VTR). The VTR is to be constructed elsewhere, and the environmental effects of its construction will be addressed via an Environmental Impact Statement (EIS); the proposed work is an interim action, intended to provide supporting information for the design without prejudicing the analysis in the EIS or the ultimate decision on the VTR project. To simulate the molten sodium coolant, investigators would use water at 120degC, maintained under pressure. The proposed loop would contain a volume of between 50 and 100 gallons of water, which would be circulated by a large centrifugal pump across a test section at flow rates up to 600 gallons per minute and at pressures up to 2 bar. The loop would be constructed from Schedule 40 stainless steel piping in 3.0" and 4.0" diameters, with mated connections using 150# ANSI flanges. It would be designed to meet applicable industry codes; e.g., ASME B31.3, and would include standard safety features such as pressure relief valves and emergency dump points. As noted above, the planned working fluid for the loop is deionized water, seeded with 40 micrometer polyamide beads at a concentration of roughly 50 mg/L. The beads are present to create adequate acoustic echo signals for ultrasonic velocimetry sensors, and would be removed from the water via filtration prior to disposal of the water in a sanitary sewer. In addition, 2-3 ppm sodium hypochlorite would be added to the water for algae control, and to raise the conductivity of the water to approximately 30 microsieverts/cm. This is the minimum level required for use of electromagnetic flow meters.

Description of Affected Environment

The work would take place in the Building 206 high bay, in the pit in the south end of the high bay. The high bay is a general-use facility, holding a number of ongoing or inactive sodium experiments.

Potential Environmental Effects

- Attach explanation for each "yes" response near bottom of form.
- **See Instructions for Completing Environmental Review Form.**

Section A (Complete For All Projects)			Yes	No	Explanation
1.	Project evaluated for Pollution Prevention and Waste Minimization opportunities and details provided under items 2, 4, 6, 7, 8, 16, and 20 below, as applicable		◉	○	The loop is to be insulated where necessary, and built as small as possible to accommodate the planned work. Polyamide beads would be removed from the wastewater prior to disposal.
2.	Air Pollutant Emissions		○	◉	
3.	Noise		○	◉	
4.	Chemical/Oil Storage/Use		○	◉	
5.	Pesticide Use		○	◉	
6.	**Toxic Substances Control Act (TSCA) Substances**				
	6a.	Polychlorinated Biphenyls (PCBs)	○	◉	
	6b.	Asbestos or Asbestos Containing Materials	○	◉	
	6c.	Other TSCA Regulated Substances	○	◉	
	6d.	Import or Export of Chemical Substances	○	◉	
7.	Biohazards		○	◉	
8.	Effluent/Wastewater (If yes, see question #12 and contact Peter Lynch (HSE) at 2-4582 or lynch@anl.gov)		◉	○	Up to 100 gallons of wastewater are planned to be produced. The water would contain 2-3 ppm sodium hypochlorite. Polyamide beads added to the water to enhance sensor response would be removed via filtration prior to disposal.
9.	**Waste Management**				
	9a.	Construction or Demolition Waste	○	◉	
	9b.	Hazardous Waste	○	◉	
	9c.	Radioactive Mixed Waste	○	◉	
	9d.	Radioactive Waste	○	◉	
	9e.	Asbestos Waste	○	◉	
	9f.	Biological Waste	○	◉	
	9g.	No Path to Disposal Waste	○	◉	
	9h.	Nano-material Waste	○	◉	
10.	Radiation		○	◉	
11.	Threatened Violation of ES&H Regulations or Permit Requirement		○	◉	
12.	New or Modified Federal or State Permits		○	◉	
13.	Siting, Construction, or Major Modification of Facility to Recover, Treat, Store, or Dispose of Waste		○	◉	
14.	Public Controversy		○	◉	
15.	Historic Structures and Objects		○	◉	
16.	Disturbance of Pre-existing Contamination		○	◉	
17.	Energy Efficiency, Resource Conserving, and Sustainable Design Features		○	◉	
Section B (For Projects that Occur Outdoors)			**Yes**	**No**	
18.	Threatened or Endangered Species, Critical Habitats, and/or other Protected Species		○	○	
19.	Wetlands		○	○	
20.	Floodplain		○	○	
21.	Landscaping		○	○	
22.	Navigable Air Space		○	○	
23.	Clearing or Excavation		○	○	
24.	Archaeological Resources		○	○	
25.	Underground Injection		○	○	

26.	Underground Storage Tanks	○	○	
27.	Public Utilities or Services	○	○	
28.	Depletion of a Non-Renewable Resource	○	○	
Section C (For Projects Outside of ANL)		**Yes**	**No**	
29.	Prime, Unique, or Locally Important Farmland	○	○	
30.	Special Sources of Groundwater (such as sole source aquifer)	○	○	
31.	Coastal Zones	○	○	
32.	Areas with Special National Designations (such as National Forests, Parks, or Trails)	○	○	
33.	Action of a State Agency in a State with NEPA-type Law	○	○	
34.	Class I Air Quality Control Region	○	○	

Categorical Exclusion

ANL NEPA Reviewer Use Only

○ My approval is the final approval necessary

◉ This form requires additional approval from DOE

To be Completed by DOE/ASO

Section D	Yes	No
Are there any extraordinary circumstances related to the proposal that may affect the significance of the environmental effects of the proposal?	○	◉
Is the project connected to other actions with potentially significant impacts or related to other proposed action with cumulatively significant impacts?	○	◉
If yes, is a categorical exclusion determination precluded by 40 CFR 1506.1 or 10 CFR 1021.211?	○	○
Can the project or activity be categorically excluded from preparation of an Environment Assessment or Environmental Impact Statement under Subpart D of the DOE NEPA Regulations?	◉	○
If yes, indicate the class or classes of action from Appendix A or B of Subpart D under which the project may be excluded: This project may be excluded under the following Categorical Exclusion: 10 CFR Part 1021, Subpart D, Appendix B: Category B3.6 Small-scale research and development, laboratory operations, and pilot projects.		
If no, indicate the NEPA recommendation and class(es) of action from Appendix C or D to Subpart D to Part 1021 of 10 CFR.		

Attachments

File Description:

Comments

Add Approver

Approver Name	Approver Badge	Reason	Delete

Notifications

The approval notification email will be copied to the people listed below.

Badge	Name	Division	Delete

ASO-CX Number

ASO-CX- 371

Comments:

Approval

Approver	Action	Date Routed	Action Date	Approval Reason / Comments	Approval Type
Woodford, John B.	APPROVED	2020-02-03	2020-02-03 10:54:53.0	Creator :	PRIMARY
Woodford, John B.	APPROVED	2020-02-03	2020-02-03 10:54:53.0	Project Manager :	PRIMARY
Riel, Roberta T.	APPROVED	2020-02-03	2020-02-03 10:57:40.0	NEPA Owner Approval for Argonne Environmental Review :	PRIMARY
Ptak, Jill S.	APPROVED	2020-02-03	2020-02-03 11:46:25.0	ANL NEPA Reviewer :	PRIMARY
Harris, Amy M.	APPROVED	2020-02-03	2020-02-03 15:21:53.0	Added: : **Peter Lynch to review effluent discharge.**	PRIMARY
Lynch, Peter L.	APPROVED	2020-02-03	2020-02-04 10:34:55.0	Added: Please review for effluent discharge. : **If using sanitary drain, flush with tap water while draining system, if possible. If option to drain to Laboratory wastewater system is available, then go with that option.**	PRIMARY
Ptak, Jill S.	APPROVED	2020-02-04	2020-02-04 12:14:19.0	Returned after added approver :	PRIMARY
Hellman, Karen B.	APPROVED	2020-02-04	2020-02-07 11:37:49.0	ANL-985 Review and Approval :	PRIMARY
Dunn, Michael W. for Kearns, Paul K.	APPROVED	2020-02-07	2020-02-14 10:16:13.0	ANL-985 ANL COO Review and Approval :	DELEGATE
Joshi, Kaushik N.	APPROVED	2020-02-14	2020-02-20 11:56:58.0	ANL-985 DOE-ASO Review and Approval : **This NEPA ERF CX approval by DOE is tracked as ASO-CX-371.**	PRIMARY
Siebach, Peter Rudolf	APPROVED	2020-02-20	2020-02-21 09:16:22.0	ANL-985 DOE NEPA Compliance Officer Review and Approval : **Consideration was made whether this action can go forward preliminary to the completion of the Versatile Test Reactor EIS. Via e-mail correspondence, the DOE Idaho Operations Office NEPA Compliance Office has determined that this action qualifies as an interim action per 10 CFR Â§ 1021.211 - Interim actions: Limitations on actions and 40 CFR Â§ 1506.1 - Limitations on actions during NEPA. This ASO NEPA determination considered the VTR Hydraulic Loop action independent of the EIS.**	PRIMARY