



Environmental Review Form for Argonne National Laboratory

Form: ANL-985
Version: 5
Your Form ID: ANL-985-1811
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Created By: McGhee, Ian Riley

Creator

Badge: 272547 **Name:** McGhee, Ian Riley
Cost Center: 331 **Division:** WSE
Job Title: ESH Multi-Functional 2 **Employee Type:** Regular Full-Time Exempt
Building: 362 **Lab Extension:** 2-2324

General Information

Project/Activity Title: Continuous Lithium Plating Line in Building 370
ASO NEPA Tracking No.: **Type of Funding:**
B & R Code: **Identifying Number:** CRADA 2020-2068
SPP Proposal Number: **CRADA Proposal Number:** 2020-2068
Work Project Number: **ANL Accounting Number:** (Item 3a in Field Work Proposal)
Other (explain):
List appropriate NEPA Owners:
Division: AMD 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

A lithium plating line would be installed in the 370 W158 HIBAY space at Argonne's main campus in Lemont, Illinois. This work is taking place under a partnership with Albemarle, with Argonne fulfilling the role of the operational tester and process determination expert before returning the equipment to Albemarle. The lithium plating line would comprise of a glovebox where plating, washing, and rewinding processes would be performed under an inert atmosphere (Argon). There would be ancillary support equipment including oxygen, solvent, and water removal columns and a drying column. Under normal operating conditions, the plating line would continuously produce lithium metal on a copper foil when operations are attended and the line is running.

Description of Affected Environment

A lithium plating line would be installed in the 370 W158 HIBAY space at Argonne's main campus in Lemont, Illinois. Product batches would be analyzed for quality before being shipped as samples, handled as hazardous waste, or used again in processes.

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	☒	☐	See responses below. All work will be conducted in compliance with Argonne guidelines and regulations.

		items 2, 4, 6, 7, 8, 16, and 20 below, as applicable			
2.		Air Pollutant Emissions	☒	☐	Pilot plant emissions, including heptane, DME, lithium salts, displaced Argon gas, and oxygen (from the anode), water vapor, etc. would be ducted to the explosion-proof ventilation in the 370 HIBAY that ducts above the roof line. Environmental Compliance has evaluated the project in regards to regulated air emissions and has determined that no additional permitting will be required for this work.
3.		Noise	☐	☒	
4.		Chemical/Oil Storage/Use	☒	☐	Only the minimum amount of chemicals needed for the project would be used and stored in original or compatible containers. Secondary containment would be used for all materials during transport and storing. Potential spills from the catholyte and washing solution tanks would be contained via a secondary containment. Leak testing will be performed for the entire system prior to use with chemicals. Both 1,2 dimethoxyethane (DME) and heptane are used in the process. The DME used as the solvent to carry the lithium salt used for plating. The heptane is used to wash DME and salt off the lithium metal once the foil leaves the plating unit.
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)	☐	☒	
9.		Waste Management			
	9a.	Construction or Demolition Waste	☐	☒	
	9b.	Hazardous Waste	☒	☐	For the work conducted at Argonne National Laboratory, all RCRA hazardous waste will be accumulated (in a Satellite Accumulation Area) by personnel qualified by Argonne-specific training. Requisitions for transfer of accumulated hazardous waste to a central on-site facility would be completed by Argonne-certified personnel. The research personnel would conform to the requirements in LMS-PROC-103. All on-site handling, storage, and disposal would be performed in accordance with the RCRA Part B permit issued by the IEPA. The accumulated hazardous waste would be disposed in accordance with Argonne's Part B permit, and in accordance with the requirement in LMS-PROC-103.
	9c.	Radioactive Mixed Waste	☐	☒	
	9d.	Radioactive Waste	☐	☒	
	9e.	Asbestos Waste	☐	☒	
	9f.	Biological Waste	☐	☒	
	9g.	No Path to Disposal Waste	☐	☒	
		Nano-material			

	9h.	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/activity can be categorically excluded from 10 CFR Part 1021, Subpart D, Appendix B under: B 3.6 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
Hryn, John N.	45247	Project Lead	
Willig, Ryne T.	232518	AMD Safety	
Harris, Amy M.	49490	AET NEPA Owner	
Lynch, Peter L.	46304	Environmental Compliance	
Thompson, Lawrence S.	97495	NWM	
Pfeiffer, Mark Albert	232188	Air emissions	
Krumdick, Gregory K.	41078	AMD DD	
Earlam, Matthew Robert	311138	PI	

Notifications

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

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<u>Badge</u>	<u>Name</u>	<u>Division</u>	<u>Delete</u>

ASO-CX Number

ASO-CX- 398

Comments:

This NEPA ERF CX approval is tracked as ASO-CX-398.

Approval

<u>Approver</u>	<u>Action</u>	<u>Date Routed</u>	<u>Action Date</u>	<u>Approval Reason / Comments</u>	<u>Approval Type</u>
McGhee, Ian Riley	APPROVED	2022-10-11	2022-10-11 15:12:02.0	Creator :	PRIMARY
McGhee, Ian Riley	APPROVED	2022-10-11	2022-10-11 15:12:02.0	Project Manager :	PRIMARY
Krumdick, Gregory K.	APPROVED	2022-10-11	2022-10-13 14:04:06.0	AMD DD :	PRIMARY
Hryn, John N.	APPROVED	2022-10-11	2022-10-11 15:40:03.0	Project Lead :	PRIMARY
Lynch, Peter L.	APPROVED	2022-10-11	2022-10-11 15:45:16.0	Environmental Compliance :	PRIMARY
Harris, Amy M.	APPROVED	2022-10-11	2022-10-13 10:18:59.0	AET NEPA Owner :	PRIMARY
Thompson, Lawrence S.	APPROVED	2022-10-11	2022-10-12 10:03:16.0	NWM :	PRIMARY
Willig, Ryne T.	APPROVED	2022-10-11	2022-10-14 11:21:16.0	AMD Safety :	PRIMARY
Earlam, Matthew Robert	APPROVED	2022-10-11	2022-10-12 09:20:00.0	PI :	PRIMARY
Pfeiffer, Mark Albert	APPROVED	2022-10-11	2022-10-12 11:38:25.0	Air emissions :	PRIMARY
Harris, Amy M.	APPROVED	2022-10-13	2022-10-13 10:18:59.0	NEPA Owner Approval for Argonne Environmental Review :	PRIMARY
Ptak, Jill S.	APPROVED	2022-10-14	2022-10-14 14:54:19.0	ANL NEPA Reviewer : Work would be beyond limits of bench-scale. Plant would be installed and run at Argonne, then disassembled, cleaned and shipped to sponsor location	PRIMARY
Hellman, Karen B.	APPROVED	2022-10-14	2022-11-01 09:18:00.0	ANL-985 Review and Approval :	PRIMARY
Dunn, Michael W.	APPROVED	2022-11-01	2022-11-09 13:06:33.0	ANL-985 ANL Deputy COO Review and Approval :	PRIMARY
Joshi, Kaushik N.	APPROVED	2022-11-09	2022-11-10 14:18:52.0	ANL-985 DOE-ASO Review and Approval : This NEPA ERF CX approval by DOE is tracked as ASO-CX-398.	PRIMARY
Siebach, Peter Rudolf	APPROVED	2022-11-10	2022-11-10 15:04:11.0	ANL-985 DOE NEPA Compliance Officer Review and Approval :	PRIMARY