



Environmental Review Form for Argonne National Laboratory

<b>Form:</b>	ANL-985
<b>Version:</b>	5
<b>Your Form ID:</b>	ANL-985-1616
<b>Form Status:</b>	Approved
<b>Date:</b>	3/11/2021 1:53:30 PM
<b>Created By:</b>	McGhee, Ian Riley

**Creator**

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

**General Information**

Project/Activity Title: Y.Cube and BESS-affiliated system operations at building 300	
ASO NEPA Tracking No.:	Type of Funding:
B & R Code:	Identifying Number: 2020-0271
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: 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**

The Y.Cube is a 1MW-30 minutes battery energy storage system (BESS) that would be installed and operated at building 300. The Y.Cube is a leased system contained in a sea-land container owned and operated by Aggreko. Inside the container are several systems, including an HVAC system, a fire suppression system, and lithium ion battery banks and associated hardware. The following electrical equipment has also been installed - Medium-voltage primary switchgear, Dry-type NEMA 3R AA/FA transformer, Walk-in low-voltage switchgear, Connecting throats and busway or braided cable, Dispensers (2), EV power units (4). New foundations and pads west of Building 300 were installed. The purpose of this installation is to continue research on battery energy storage systems and how they can be used to support high-demand grids. Since this installation would be at building 300, the solar canopy at the building will help to charge the Y.Cube, and then the Y.Cube supply will be able to support grid stability reducing peaks during periods of high demand both at the building (when multiple electric vehicles are charging) and at Argonne. Data will be collected to continue research on grid stability/security and vehicle electrification and charge patterns. The Y.Cube would be connected to the power supply at building 300, which also adds the Y.Cube to the general laboratory grid. Operation of the equipment will entail monitoring equipment status and reporting any issues to Aggreko to be resolved. A yearly maintenance process will consist of checking internal systems including HVAC functionality, fire suppression system status, and routine maintenance including changing air filters. Installation of the Y.Cube and associated electrical equipment is covered under a separate categorical exclusion, form number ANL-985-1551 and is excluded under ASO-CX-262.

**Description of Affected Environment**

The Y.Cube would be mounted on a gravel pad with concrete footers, and other associated hardware (walk in transformer, etc.) will be in the general vicinity next to building 300. Under normal operation, there is no affected environment, as the Y.Cube is a self-contained battery storage system. Should the fire suppression system (3M Novec 1230 - 51L cylinder/30kg agent) or refrigerant (Antifrogen N/R-410A) leak, any such maintenance would be planned and executed by Aggreko with approval from Argonne.

**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	<input checked="" type="radio"/>	<input type="radio"/>	See below
2.	Air Pollutant Emissions	<input checked="" type="radio"/>	<input type="radio"/>	The Y.Cube uses Samsung-branded P-type Lithium ion cells, along with a fire suppression system consisting of 3M Novec 1230 (51L cylinder/30kg agent), and an HVAC system consisting of Antifrogen N and R-410A.
3.	Noise	<input type="radio"/>	<input checked="" type="radio"/>	
4.	Chemical/Oil Storage/Use	<input checked="" type="radio"/>	<input type="radio"/>	The Y.Cube uses Samsung-branded P-type Lithium ion cells, along with a fire suppression system consisting of 3M Novec 1230 (51L cylinder/30kg agent), and an HVAC system consisting of Antifrogen N and R-410A.
5.	Pesticide Use	<input type="radio"/>	<input checked="" type="radio"/>	
6.	<b>Toxic Substances Control Act (TSCA) Substances</b>			
6a.	Polychlorinated Biphenyls (PCBs)	<input type="radio"/>	<input checked="" type="radio"/>	
6b.	Asbestos or Asbestos Containing Materials	<input type="radio"/>	<input checked="" type="radio"/>	
6c.	Other TSCA Regulated Substances	<input type="radio"/>	<input checked="" type="radio"/>	
6d.	Import or Export of Chemical Substances	<input type="radio"/>	<input checked="" type="radio"/>	
7.	Biohazards	<input type="radio"/>	<input checked="" type="radio"/>	
8.	Effluent/Wastewater (If yes, see question #12 and contact Peter Lynch (HSE) at 2-4582 or lynch@anl.gov)	<input type="radio"/>	<input checked="" type="radio"/>	
9.	<b>Waste Management</b>			
9a.	Construction or Demolition Waste	<input type="radio"/>	<input checked="" type="radio"/>	
9b.	Hazardous Waste	<input type="radio"/>	<input checked="" type="radio"/>	
9c.	Radioactive Mixed Waste	<input type="radio"/>	<input checked="" type="radio"/>	
9d.	Radioactive Waste	<input type="radio"/>	<input checked="" type="radio"/>	
9e.	Asbestos Waste	<input type="radio"/>	<input checked="" type="radio"/>	
9f.	Biological Waste	<input type="radio"/>	<input checked="" type="radio"/>	
9g.	No Path to Disposal Waste	<input type="radio"/>	<input checked="" type="radio"/>	
9h.	Nano-material Waste	<input type="radio"/>	<input checked="" type="radio"/>	
10.	Radiation	<input type="radio"/>	<input checked="" type="radio"/>	
11.	Threatened Violation of ES&H Regulations or Permit Requirement	<input type="radio"/>	<input checked="" type="radio"/>	
12.	New or Modified Federal or State Permits	<input type="radio"/>	<input checked="" type="radio"/>	
13.	Siting, Construction, or Major Modification of Facility to Recover, Treat, Store, or Dispose of Waste	<input type="radio"/>	<input checked="" type="radio"/>	
14.	Public Controversy	<input type="radio"/>	<input checked="" type="radio"/>	
15.	Historic Structures and Objects	<input type="radio"/>	<input checked="" type="radio"/>	
16.	Disturbance of Pre-existing Contamination	<input type="radio"/>	<input checked="" type="radio"/>	
17.	Energy Efficiency, Resource Conserving, and Sustainable Design Features	<input checked="" type="radio"/>	<input type="radio"/>	Electrical equipment installed under the project is energy efficient and meets industry standards. The Y.Cube is also a Battery Energy Storage System designed to store excess storage energy from the 300 charging plaza.
<b>Section B (For Projects that Occur Outdoors)</b>		<b>Yes</b>	<b>No</b>	
18.	Threatened or Endangered Species, Critical Habitats, and/or other Protected Species	<input type="radio"/>	<input checked="" type="radio"/>	

19.	Wetlands	<input type="radio"/>	<input checked="" type="radio"/>	
20.	Floodplain	<input type="radio"/>	<input checked="" type="radio"/>	
21.	Landscaping	<input type="radio"/>	<input checked="" type="radio"/>	
22.	Navigable Air Space	<input type="radio"/>	<input checked="" type="radio"/>	
23.	Clearing or Excavation	<input type="radio"/>	<input checked="" type="radio"/>	
24.	Archaeological Resources	<input type="radio"/>	<input checked="" type="radio"/>	
25.	Underground Injection	<input type="radio"/>	<input checked="" type="radio"/>	
26.	Underground Storage Tanks	<input type="radio"/>	<input checked="" type="radio"/>	
27.	Public Utilities or Services	<input checked="" type="radio"/>	<input type="radio"/>	The modifications made to the electrical supply at building 300 have the capability to affect Argonne's electrical grid. Engineering controls are in place to ensure that the Y.Cube does not cause power disruptions to the grid.
28.	Depletion of a Non-Renewable Resource	<input type="radio"/>	<input checked="" type="radio"/>	
<b>Section C (For Projects Outside of ANL)</b>		<b>Yes</b>	<b>No</b>	
29.	Prime, Unique, or Locally Important Farmland	<input type="radio"/>	<input checked="" type="radio"/>	
30.	Special Sources of Groundwater (such as sole source aquifer)	<input type="radio"/>	<input checked="" type="radio"/>	
31.	Coastal Zones	<input type="radio"/>	<input checked="" type="radio"/>	
32.	Areas with Special National Designations (such as National Forests, Parks, or Trails)	<input type="radio"/>	<input checked="" type="radio"/>	
33.	Action of a State Agency in a State with NEPA-type Law	<input type="radio"/>	<input checked="" type="radio"/>	
34.	Class I Air Quality Control Region	<input type="radio"/>	<input checked="" type="radio"/>	

**Categorical Exclusion**

Other (Use field below to enter other categorical exclusion)

Operation of the system falls outside of the benchscale research category ASO-CX-325

**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?	<input type="radio"/>	<input checked="" type="radio"/>
Is the project connected to other actions with potentially significant impacts or related to other proposed action with cumulatively significant impacts?	<input type="radio"/>	<input checked="" type="radio"/>
If yes, is a categorical exclusion determination precluded by 40 CFR 1506.1 or 10 CFR 1021.211?	<input type="radio"/>	<input type="radio"/>
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?	<input checked="" type="radio"/>	<input type="radio"/>
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 10 CFR 1021, Subpart D, Appendix B Categories: B 4.1 Contracts, policies, and marketing and allocation plans for electric power, and B 4.6 Additions and modifications to transmission facilities.		
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
Dobrzynski, Daniel S.	216349	PIC	
Wallner, Thomas	56413	ES Section Leader	

### Notifications

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

Badge	Name	Division	Delete

### ASO-CX Number

**ASO-CX- 384**

Comments:

### 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	2021-03-23	2021-03-23 09:01:23.0	Creator :	PRIMARY
McGhee, Ian Riley	APPROVED	2021-03-23	2021-03-23 09:01:23.0	Project Manager :	PRIMARY
Wallner, Thomas	APPROVED	2021-03-23	2021-03-23 09:09:22.0	ES Section Leader :	PRIMARY
Dobrzynski, Daniel S.	APPROVED	2021-03-23	2021-03-29 08:30:31.0	PIC :	PRIMARY
Harris, Amy M.	APPROVED	2021-03-29	2021-03-30 06:45:40.0	NEPA Owner Approval for Argonne Environmental Review :	PRIMARY
Ptak, Jill S.	APPROVED	2021-03-30	2021-04-13 10:30:43.0	ANL NEPA Reviewer : <b>Equipment lease and operation of Battery energy storage system for research</b>	PRIMARY
Hellman, Karen B.	APPROVED	2021-04-13	2021-04-13 14:46:04.0	ANL-985 Review and Approval :	PRIMARY
Dunn, Michael W.	APPROVED	2021-04-13	2021-04-15 07:45:52.0	ANL-985 ANL Deputy COO Review and Approval :	PRIMARY
Joshi, Kaushik N.	APPROVED	2021-04-15	2021-04-20 10:53:04.0	ANL-985 DOE-ASO Review and Approval : <b>This NEPA ERF CX approval by DOE is tracked as ASO-CX-384.</b>	PRIMARY
Siebach, Peter Rudolf	APPROVED	2021-04-20	2021-04-20 15:53:50.0	ANL-985 DOE NEPA Compliance Officer Review and Approval :	PRIMARY