Environmental Review Form for Argonne National Laboratory

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Cost Center:	**208**	Division:	**PMO**
Job Title:	**Consultant**	Employee Type:	**Non-Regular Full-Time Non-Exempt**
Building:		Lab Extension:	

General Information

Project/Activity Title: Argonne Utilities Upgrade (AU2)

ASO NEPA Tracking No.: 3269 Type of Funding:

B & R Code: Identifying Number: 01802

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: PMO 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

Argonne's scientific advancements require a strong foundation that supports reliable, redundant, maintainable, and flexible utility systems, as this is vital in order to support DOE mission-critical programs and initiatives. In order to continue with this mission, ANL proposed a large-scale utility repair and upgrade project, Argonne Utilities Upgrade (AU2), for DOE Science Laboratory Infrastructure (SLI) funding to address numerous deficiencies and issues associated with aging critical infrastructure. AU2 achieved Critical Decision-0, 'Approval of Mission Need' in Fiscal Year 2019. The scope of the AU2 Project's mission need focuses on the most critical repairs and investments associated with several major utility systems, including chilled water, domestic and canal water, steam and condensate, and sewer systems (sanitary, laboratory, and storm). These construction repairs and investments would be divided into (1) utility plants, (2) utility piping systems, (3) controls systems, and (4) equipment. The AU2 project would be divided into multiple phases, and this ERF is intended as an overall, high-level NEPA Review for the whole project. There will be smaller, more focused ERFs for the different project phases. Utility Plants: The largest piece of the AU2 project includes a new combined chilled water and steam plant to be constructed in Argonne's 100 area. See Table A.1 for the proposed location of this plant. The plant would add an additional 6,300 tons of chilled water capacity to the site chilled water system and would generate a peak load of 250,000lbs/hr. of 200 psi steam. The building would includes all the foundations, structural elements, finishes, equipment, mechanical, electrical, and plumbing work required for the building to function. Utility Piping Systems: The project includes expansion, replacement, rehabilitation, and repairs of aged utility piping systems around ANL campus. The upgrades for piping systems would include chilled water, domestic and canal water, steam and condensate, and sewer systems (sanitary, laboratory, and storm). Many of the piping system replacements also would include replacement of valves, pipe supports, vaults, culverts, and other related accessories. Controls Systems: The existing campus infrastructure is a mixture of pneumatic and electric controls. The electric controls vary in vintage from the early 2000s to current. Modernization of controls systems is part of the AU2 scope that includes adding monitors and controls to different utility systems for report summaries, trend data for equipment operation, daily usage, electrical usage, operational cost, among other information. The AU2 project would include replacement and modernization of several existing controllers and utility meters around campus. Equipment: AU2 includes repairs, recondition, and replacement of aged equipment around ANL campus. Equipment upgrades would include chillers, pumps, above ground tanks, lift stations, and other maintenance of equipment.

Description of Affected Environment

Argonne National Laboratory is located near Lemont, IL, approximately 25 miles southwest of Chicago. Argonne Utility Upgrades would take place throughout the campus in previously disturbed areas. Please refer to the attached file containing tables A.1-A.5 which highlight possible construction work locations divided into the different utility systems. If additional sub-projects of similar scopes are added from tables A.1-A.5, they would be covered by this form. The AU2 project would be divided into multiple phases, and this ERF is intended as an overall, high-level NEPA review for the whole project. There would be smaller, more focused ERFs for the different project phases. Truck and equipment traffic would be heavier for the construction of the combined plant, and it is not expected to impact the major traffic paths inside the ANL campus nor the protected critical habitats. Truck traffic would mainly utilize east gate for site access to mitigate impacts to central campus. When replacing/installing new linear assets that cross existing roadways, traffic would be impacted for a short duration when the road would be closed for construction. Utility Plants: A combined chilled water & steam plant would be constructed on a pre-disturbed part of the 100 area. Currently the area is mostly paved/vacant, but some small structures may exist on the site that may need to be demolished. Utility Piping Systems: Construction work for utility piping systems would occur around ANL campus, but would mainly be focused on the 100, 200, and 300 areas. Construction would mostly take place in existing utility corridors near or under roads, or wherever the piping currently exists. For any new piping that would be installed, undisturbed areas would be avoided to the extent possible. Controls Systems: Replacements, repairs, and modifications would take place in existing structures and areas that are pre-disturbed. Equipment: Replacements, repairs, and additions would take place in existing structures and areas that are pre-disturbed.

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	◉	○	Measures to reduce waste and pollution would be evaluated as an ongoing process throughout construction.
2.	Air Pollutant Emissions	◉	○	Minor emissions from cars and construction equipment would occur during construction. Equipment at jobsite would be running during typical daily working hours. For new HVAC equipment, the project would ensure that the refrigerant used conforms to EPA's SNAP regulations (40 CFR 82 Subpart G) and is an acceptable substitute.
3.	Noise	◉	○	General construction noises are expected. The activities would follow the appropriate Argonne hearing protection procedures, and any noises above the OSHA standards would require workers to wear the appropriate personal protective equipment. Standard operation of construction equipment would not impact the activities of adjacent buildings. Noise impact outside of the ANL campus would be minimal since the project's scope of work would take place inside the fence.
4.	Chemical/Oil Storage/Use	◉	○	Typical construction chemicals such as adhesives and gasoline would be used. The material would be stored in proper containers and protected from spillage per the Stormwater Pollution Prevention Plan (SWPPP) created by the appropriate subcontractor and approved by the AU2 project team. The project would monitor the SWPPP. SDS would be available for chemicals on the construction site. In addition, an emergency cleanup plan and the construction SWPPP plan shall be in place in case of accidental releases. Oils would be managed during construction in accordance with Argonne's Spill Prevention, Control, and Countermeasures (SPCC) Plan.
5.	Pesticide Use	○	◉	
6.	**Toxic Substances Control Act (TSCA) Substances**			
6a.	Polychlorinated Biphenyls (PCBs)	○	◉	Not expected but if found, standard Argonne disposal procedures would be followed. Work on existing transformers are not anticipated as part of AU2.
6b.	Asbestos or Asbestos Containing	◉	○	Some existing piping materials might contain ACM including pipe insulation, therefore ACM waste may be generated from demolition activities. A qualified asbestos abatement contractor would be employed by ANL to remove and dispose of all ACM. Normal Argonne and IEPA

		Materials			procedures would be followed.
	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)		◉	○	The results of construction activities would generate some storm water effluent. This is mostly a concern during civil work for the new plants or piping projects. Construction runoff is not a factor for controls and equipment scope that would take place inside existing structures. Any storm water discharges during construction would be filtered prior to discharge using different stormwater runoff controls. These activities, including inspections, frequency, and qualifications of stormwater inspectors in accordance with IEPA would be documented in more detail with a Stormwater Pollution Prevention Plan (SWPPP) in accordance with ANL LMS-PROC-122 (Water Pollution Control) and a Notice of Intent (NOI). The SWPPP would be created by the appropriate subcontractor and submitted to the AU2 management team for approval. The SWPPP would be monitored by the project, included in the project design, and implemented by the construction contractor. Any storm sewer inlets and outfalls near the project would be protected.
9.	**Waste Management**				
	9a.	Construction or Demolition Waste	◉	○	Demolition waste would consist of construction materials, landscape and organics, and demolished equipment. The project would work on establishing trash collection areas where the debris can be sorted, and recyclables placed in appropriate containers. All material would be either recycled as scrap or disposed of as solid waste in an industrial landfill. Excavated materials such as gravel, asphalt, concrete, would be recycled off site by the construction contractor. Decommissioned equipment containing refrigerant would be handled and disposed of in accordance with 40 CFR 82.155 - Safe disposal of appliances.
	9b.	Hazardous Waste	○	◉	At this time the project does not anticipate conducting any work in areas with known contamination. The new plant and most of the work would be outdoors. Equipment replacement would be in existing mechanical spaces without known contamination. The project does not anticipate working with hazardous waste, but if any is found, the project would accumulate all RCRA hazardous waste in Satellite Accumulation Area(s) by qualified personnel who underwent Argonne-specific training. Requisitions for transfer of accumulated hazardous waste to a central on-site facility are completed by Argonne-certified personnel. The research personnel conform to the requirements in Argonne's Hazardous Waste Handling Procedures Manual. All on-site treatment, storage, and disposal would be performed in accordance with the RCRA Part B permit issued by the IEPA. The accumulated hazardous waste is disposed in accordance with Argonne's Part B permit, and in accordance with the requirement in Argonne's Waste Handling Procedures Manual.
	9c.	Radioactive Mixed Waste	○	◉	
	9d.	Radioactive Waste	○	◉	
	9e.	Asbestos Waste	◉	○	ACM waste may be generated from pipe insulation. A qualified asbestos abatement contractor would be employed by ANL to remove and dispose of all ACM. Normal Argonne and IEPA procedures would be followed.
	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	◉	○	The project would obtain a SWPPP permit from the state of Illinois. The project would obtain any other required permits if needed as determined by design development. Argonne subject matter experts would be included in project planning and design reviews to help determine if and/or when a specific permit would be needed. This includes but not limited to: DuPage County permits, USFWS permits, and permits with the Army Corps. Of Engineers. Argonne Environmental Compliance would need to be consulted for permitting with the Illinois Environmental Protection Agency (IEPA) in regards to the new combined steam and chilled water plant. See Table A.1 for the proposed plant location. A Prevention of Significant Deterioration (PSD) New Source Review (NSR) would be required prior to permitting. Argonne would meet reasonable available control technology (RACT) requirements for NOx emissions as well as implement continuous emissions monitoring as required. Argonne Environmental Compliance would need to be consulted for permit requirements for new emergency generators and associated fuel tanks. Permitting with the Illinois Environmental Protection Agency and Illinois State Fire Marshal may be required based on the power output of the generators and the type of fuel tank being used.
13.	Siting, Construction, or Major Modification of Facility to Recover, Treat, Store, or Dispose of Waste	◉	○	AU2 would include upgrades and replacements to the lab, sanitary, and storm sewer system. This includes utility piping systems replacements and repairs, rehabilitation of lab waste claricones, repairing culverts and storm sewers, and repairs at the sanitary waste treatment facility.
14.	Public Controversy	○	◉	At this time, AU2 does not anticipate any public controversies as the work would take place inside ANL's campus. The new combined utility plant in the 100 area would have stacks of similar height to those already currently present at Building 108. If any controversies arise, the project would work with Communications and Public Affairs (CPA). As appropriate, the project may organize public outreach that would include the Timberlake Civic Association and Argonne Community Roundtable.
15.	Historic Structures and Objects	○	◉	Some work would take place in building 350 and area 200, which is Argonne Main Campus Historic District. There are no anticipated impacts to the facades of historic structures during the project. As appropriate, DOE and Argonne would coordinate with the State Historic Preservation Office (SHPO) if adverse affects would be anticipated from a project action. The project does not expect to work on undisturbed areas, but if needed, the project would conduct archaeological surveys as appropriate. If archaeological surveys are identified as needed, they would be included in the ERFs for the different project phases. Please see SK-2 for archeological surveys on record of Argonne's campus.
16.	Disturbance of Pre-existing Contamination	○	◉	AU2 project scope would take place across campus in mostly pre-disturbed areas and inside of existing buildings. Pre-existing contamination is not expected, but if found, the project would contact Matt Mesarch from the QAS-EP group, and follow IEPA requirements that would need to be reviewed for their applicability to the situation.
17.	Energy Efficiency, Resource Conserving, and Sustainable Design Features	◉	○	The project would construct a new steam and chilled water plant, along with the other utility assets mentioned in the description of the proposed action. AU2 would follow the sustainability goals in accordance with High Performance Sustainable Building guidelines and others from tools such as DOE checklist, FEMP tools, and ENVISION checklist throughout the design process. Many of the systems are being upgraded to a more efficient equipment in addition to replacing aging systems. The new equipment would be designed to integrate into the existing systems, and provisions would be made to allow for future upgrades and further system optimization. During construction, sustainable acquisition would be preferred, increase recycling would be encouraged, and reduction of construction waste, energy use, and water use would be included in the project's goals.
Section B (For Projects that Occur Outdoors)		**Yes**	**No**	
18.	Threatened or Endangered Species, Critical Habitats, and/or other Protected Species	○	◉	AU2 project scope would take place across campus in mostly pre-disturbed areas and inside of existing buildings. There is one T&E species that has been identified on campus, the Hine's Emerald dragonfly. The areas of campus where these dragonflies have been observed are on the northwest side of area 200, and around pockets of wetlands contiguous with uplands. Neither site has been declared prime habitat. Please see 'SK-1 - Provisional Jurisdictional Determinations of Argonne Wetlands' in the ERF attachment for wetland locations on campus. In the U.S. Fish and Wildlife Service (USFWS), there are seven other T&E species listed in DuPage County. These species include Northern long-eared bats, Hine's emerald dragonflies, Rusty patched bumble bees, Eastern prairie fringed orchids, Leafy-prairie clovers, Mead's milkweeds, and Prairie bush clovers. None of these species have been observed inside

				Argonne's campus. The areas of campus where the Hine's Emerald dragonflies are known to be found would not be impacted by the AU2 project. As appropriate, DOE/Argonne would consult with the USFWS regarding T&E species.
19.	Wetlands	○	◉	The AU2 project does not anticipate construction in any wetlands at this time, however it is understood that this could change based on the scope of the project. Please see SK-1 for the wetlands map at ANL. If the project determines that work could take place in proximity to wetlands, buffers would be established around wetland areas. The appropriate regulatory permits would be obtained, if wetland impact would take place. A permit from the USACOE, under section 404 from the Clean Water Act would be obtained when the project received 1 or more acres in area of disturbance. Additionally, as appropriate, a MPDS permit would be obtained for stormwater discharge from the construction site. Work identified near or around wetlands would have a settlement and erosion control plan, in addition to a SWPPP that would be created by the appropriate subcontractor and submitted to the AU2 management team for approval. The SWPPP would be monitored by the project. Depending on design development, some best practices to mitigate impacting wetlands would include, but are not limited to: (1) Protect any area with wetland characteristics near construction (2) Re-route the construction of new utility piping systems around wetlands (3) Limit construction to winter months when soil and water are more likely to be frozen and vegetation is dormant (4) Use mats and wide track vehicles to spread the distribution of equipment weight when crossing wetlands.
20.	Floodplain	○	◉	The AU2 project does not anticipate construction in any floodplains at this time. Depending on design development, some best practice design mitigations would include, but are not limited to: 1. Re-route the construction of new utility piping systems 2. Limit construction to winter months when soil and water are more likely to be frozen and vegetation is dormant 3. Use mats and wide track vehicles to spread the distribution of equipment weight when crossing floodplains.
21.	Landscaping	◉	○	AU2 expects to have minimal impact in the disruption of the landscape for piping systems upgrades and additions. The landscaping of disturbed ground for these would be assessed and re-landscaped to maintain their pre-construction conditions. With the construction of the new combined utility plant, the existing landscape would be removed. Any tree in the site would be saved where practical. Native landscaping would be designed into the landscape plan as part of the project. AU2 would follow the 60 CFR 40837 EPA Guidance on Beneficial Landscape Practices to avoid any invasive species. For controls and equipment upgrades and additions, AU2 does not expect landscaping disturbance due to the systems located inside existing buildings.
22.	Navigable Air Space	◉	○	An FAA notification would be required when the max height is reached during the construction of the combined utility plant stacks. AU2 does not anticipate using a mobile/tower crane over 150 feet during construction. If a crane of greater height is needed, the project would complete a FAA notification, as appropriate.
23.	Clearing or Excavation	◉	○	Excavation and clearing would occur to work on the replacement, repair, and expansion of the following piping systems throughout the ANL campus: (1) chiller water service lines, (2) canal water service lines, (3) steam and condensate lines, (4) domestic water service lines, and (5) sewer lines. Certain piping systems additions and upgrades would require excavation and grading. AU2 would route any new piping systems in existing utility corridors to minimize the need for landscape impact. There would also be excavation required for foundations of the proposed combined utility plant. The project would employ a Stormwater Pollution Prevention Plan (SWPPP) per above to mitigate environmental impacts of excavation. For excavations inside the campus, Argonne dig permitting procedures would be followed under LMS-Proc-96. Excavated soils would be used as backfill in some areas where regrading is necessary. Leftover spoils would be hauled off-site and disposed as appropriate based on Clean Construction and Demolition Debris (CCDD) soil testing results, following Nuclear & Waste Management Division (NWM) 609 guidelines.
24.	Archaeological Resources	○	◉	AU2 does not anticipate working in undisturbed areas without an archaeological survey on record. If the project would need to perform work in an area not previously surveyed, AU2 would work with EVS to perform an archaeological survey. If archaeological surveys are identified as needed, they would be included in the ERFs for the different project phases. Please see SK-2 for archeological surveys on record of Argonne's campus.
25.	Underground Injection	○	◉	The Project does not anticipate to work on any USTs. If the project would need to remove or work on any UST, the project would contact Matt Mesarch from the QAS-EP group and ANL Environmental Compliance prior to the work taking place.
26.	Underground Storage Tanks	○	◉	
	Public Utilities or			In the event a natural gas main would need to be modified for the new steam plant, the project would work with Nicor. AU2 would coordinate with any other utility companies as necessary, as well as the Argonne Infrastructure Services which operates and maintains the utilities on

27.	Services	◉	○	campus. Excavation work outside or adjacent to the ANL campus fence is not anticipated, but if needed, the project would contact J.U.L.I.E. (Joint Utility Locating Information for Excavators) as mandated by Illinois state laws.
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

Other (Use field below to enter other 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 categories of 10 CFR 1021, Subpart D, Appendix B: B 1.3 Routine maintenance B 1.5 Existing steam plants and cooling water systems B 5.4 Repair or replacement of pipelines

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: AU2 - ERF Attachment View Attachment

Comments

ERF Item 2: Please ensure that only climate friendly refrigerants (with low Global Warming Potential and not among the banned Ozone Depleting Substances) will be used for new chilled water plant.

Add Approver

Approver Name	Approver Badge	Reason	Delete
Cisek, Jonathan E.	212942	Project Manager	

Notifications

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

Badge	Name	Division	Delete

ASO-CX Number

ASO-CX- 379

Comments:

B 1.3 Routine maintenance B 1.5 Existing steam plants and cooling water systems

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Approval

Approver	Action	Date Routed	Action Date	Approval Reason / Comments	Approval Type
Flores, Nicole V.	APPROVED	2020-11-05	2020-11-05 15:33:16.0	Creator :	PRIMARY
Flores, Nicole V.	APPROVED	2020-11-05	2020-11-05 15:33:16.0	Project Manager :	PRIMARY
Cisek, Jonathan E.	APPROVED	2020-11-05	2020-11-06 11:32:31.0	Project Manager :	PRIMARY
Andersen, Karyn Elizabeth Schoch	APPROVED	2020-11-06	2020-11-09 14:45:04.0	NEPA Owner Approval for Argonne Environmental Review :	PRIMARY
Ptak, Jill S.	APPROVED	2020-11-09	2020-11-24 14:45:07.0	ANL NEPA Reviewer :	PRIMARY
Pfeiffer, Mark Albert	APPROVED	2020-11-24	2020-11-24 16:12:50.0	Added: SME - air : **See comments for new federal and state permits. Extensive permitting will be required for a new steam plant or modification to the existing boiler house and/or CHP.**	PRIMARY
Lynch, Peter L.	APPROVED	2020-11-24	2020-11-30 16:44:17.0	Added: SME : **It is understood that individual scope elements may require any combination of permitting (IEPA SWPPP, US ACOE, etc).**	PRIMARY
Sullivan, Casey J.	APPROVED	2020-11-30	2020-12-01 09:29:30.0	Added: SME :	PRIMARY
Hellman, Karen B.	APPROVED	2020-12-01	2020-12-01 14:32:37.0	ANL-985 Review and Approval :	PRIMARY
Zachos, Lee C. for Kearns, Paul K.	APPROVED	2020-12-01	2020-12-02 08:35:01.0	ANL-985 ANL COO Review and Approval :	DELEGATE
Joshi, Kaushik N.	APPROVED	2020-12-02	2020-12-07 15:55:05.0	ANL-985 DOE-ASO Review and Approval : **DOE approval of this NEPA CX is tracked as ASO-CX-379.**	PRIMARY

Siebach, Peter Rudolf	APPROVED	2020-12-07	2020-12-07 17:36:43.0	ANL-985 DOE NEPA Compliance Officer Review and Approval :	PRIMARY