

Appendix D

Decommissioning Plan

A DECOMMISSIONING PLAN FOR

Midwater Battery Energy Storage System Project

Freeborn County, Minnesota

SEPTEMBER 23, 2024

PREPARED FOR:

spearmint
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Decommissioning Plan

Midwater Battery Energy Storage System Project

Freeborn County, Minnesota

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Project Number: 0046089.00

Date: September 23, 2024

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Attachment A: Decommissioning Cost Estimate

1.0 Introduction / Project Description

This Decommissioning Plan (“Plan”) has been prepared for the Midwater Battery Energy Storage System (“BESS”) Project in accordance with the Freeborn County Code of Ordinance and Minnesota Public Utilities Commission (PUC) Site Permit Guidelines. The Minnesota Department of Commerce (DOC) Energy Environmental Review and Analysis (EERA) *Recommendations on Review of Solar and Wind Decommissioning Plans* has also been considered in the development of this Plan. The purpose of the Plan is to describe the means and methods that can be used to remove all structures, foundations, underground and overhead cables, and equipment and to reclaim and restore the land altered during the construction and operation of the BESS project to its predevelopment condition to the extent feasible.

The Midwater BESS Project (“Project”) has a capacity of 150-megawatt (MW)/ 600-megawatt hours (MWh) with a storage duration of four (4) hours. The Project is proposed by Spearmint Energy (“Applicant”) in Freeborn County, Minnesota. Upon completion, the Facility will comprise battery storage containers with integrated inverters, medium voltage transformers, underground and overhead alternating current collection lines, a substation, access roads, and fencing. The Project is located on approximately fourteen (14) fenced acres.

2.0 Decommissioning Objective

The objective of decommissioning is to restore the site to a condition that will facilitate its pre-construction use at the end of operation. A BESS is expected to have a useful commercial lifespan of approximately thirty-five (35) years. The system must be decommissioned if: a) it reaches the end of system’s serviceable life; or b) the system becomes a discontinued use. After the Site Permit term expires, the Project operation may be extended (upon Commission review and approval) or the Project ceases to operate. The Project Applicant will be responsible for removal of all underground equipment within the Project Area. The Applicant will restore and reclaim the site to pre-construction topography and topsoil quality to the extent practical and assumes that most of the site will be returned to farmland and/or pasture after decommissioning.

Decommissioning includes removing the battery storage containers, medium voltage transformers, alternating current collection lines, and substation. The civil facilities, access road, security fence, and drainage structures are included in the scope. Standard decommissioning practices would be utilized, including dismantling and repurposing, salvaging/recycling, or disposing of the BESS improvements.

3.0 Proposed Future Land Use

Prior to the development of the Project, the project area was enrolled in the Conservation Reserve Program. After all equipment and infrastructure is removed during decommissioning, any holes or voids created by poles, concrete pads, and other equipment will be filled in with native soil to the surrounding grade, and the site will be restored to pre-construction conditions to the extent feasible. All access roads and other areas compacted by equipment will be decompacted to a depth necessary to ensure drainage of the soil and root penetration prior to fine grading and revegetation to match preconstruction

conditions. Please refer to Section 5.2 for a detailed description of reclamation activities.

4.0 Notification

Midwater BESS anticipates operating the Project for thirty-five (35) years after Site Permit issuance. At the end of the anticipated operation, the Project Applicant will be responsible for removing the BESS as described in this Plan; however, the Project Applicant reserves the right to continue to operate the Project, instead of decommissioning, by applying for an extension of required and applicable permits.

After the Project has reached the end of its useful life, and prior to the start of decommissioning activities, the Project Applicant will notify the Commission, landowners, affected parties, counties, and other local units of government in writing, of the intended decommissioning activities and schedule. These parties will again be notified once decommissioning activities have been completed.

5.0 Decommissioning Activities

Decommissioning of the Project will include removing the battery containers (which contain batteries, inverters, and other auxiliary equipment), steel foundation posts and beams, transformers, underground and overhead cables and lines, equipment pads and foundations, equipment cabinets, ancillary equipment, and the associated substation. The civil facilities, access roads, and security wall/fence are included in the scope. Standard decommissioning practices will be utilized, including dismantling and repurposing, salvaging/recycling, or disposing of the battery energy storage improvements.

During decommissioning, the landowners will be consulted to identify the extent and type of work to be completed. Some Facility infrastructure, such as the access roads, may be left in place at the landowners' requests. All foundations and underground components will be removed to a depth of four (4) feet. Underground utility lines, if deeper than four (4) feet below ground surface elevation, may be left in place to minimize land disturbance and associated impacts to future land use.

Decommissioning will include the removal and transportation of all project components from the Project site. All dismantling, removal, recycling, and disposal of materials generated during decommissioning will comply with rules, regulations, and prevailing Federal, State, and local laws at the time decommissioning is initiated and will use approved local or regional disposal or recycling sites as available. Recyclable materials will be recycled to the furthest extent practicable. Non-recyclable materials will be disposed of in accordance with State and Federal law.

5.1 Decommissioning of Project Components

5.1.1 Batteries and Battery Containers

Regulatory Considerations Regarding the Batteries:

The regulatory requirements applicable to BESS decommissioning at the time of decommissioning (i.e., 35 years in the future) are currently unknown. However, with respect to BESS decommissioning, the Project Applicant will comply with the then current applicable rules and regulations.

Lithium-ion battery cells are typically constructed with non-hazardous materials such as cobalt, aluminum, nickel, copper and graphite. However, currently the United States (US) Environmental

Protection Agency (EPA) has guidelines for responsible disposal and recycling of lithium-ion batteries that have reached end of life (Title 40 Code of Federal Regulations Part 273: Standards for Universal Waste Management). These Universal Waste Regulations ensure that, among other requirements, the battery cells will not be disposed of in a municipal landfill.

As the “generator” of such Universal Waste, the Applicant will adhere to both applicable Universal Waste Regulations provided by the US EPA as well as any applicable US Department of Transportation (DOT) requirements associated with shipping the battery modules to the recycling facility. The Applicant will engage a licensed battery recycling location to arrange for disposal of the batteries in accordance with applicable state and federal regulations.

Permits, Certifications, and Training Required for Personnel Involved in the Decommissioning:

Prior to commencing decommissioning, Applicant and/or its designee/subcontractor will ensure that all personnel on-site during the decommissioning process has received a site-specific safety briefing and are aware of all electrical shock and arc flash risks, particularly when working within the battery containers. Hazmat training will be conducted for all personnel handling lithium-ion batteries during the process, subject to their job function per Code of Federal Regulations (CFR) section 172.704 or then applicable regulation. Only qualified electricians will be utilized for the disconnection and removal of battery modules from individual battery racks. As a handler (and storage) of universal waste, the Project Applicant and/or their designee/subcontractor shall have an EPA Identification Number as required by 40 CFR 273.32 or then applicable regulation. Additionally, lithium-ion batteries are classified by the US DOT as Class 9 hazardous materials. All requirements related to the packaging, labeling and transportation contained in the Code of Federal Regulations, Title 49, Subchapter C, Parts 171-180, will be followed.

State of Charge at Decommissioning:

The BESS Facility will be fully discharged to the minimum state of charge required for removal and safe transportation as per battery manufacturer specifications. Such a state of charge will be validated via remote telemetry from the facility battery management system (BMS). Following this validation, the DC disconnect switch for each battery container will be opened and locked out for the remainder of the decommissioning process to ensure no additional charging occurs. If the batteries will be reused, the Facility will follow manufacturer’s instructions regarding depth of discharge to prevent cell damage.

Individual Battery Removal Process:

It is anticipated that battery modules will be removed from their racks, repackaged on site, and shipped in-tact to a regional recycling hub within 500 miles from the Facility. No disassembly of battery modules will be required on-site, and the battery terminals will be taped off and protected to avoid any potential for a short to occur during packaging and shipping. Project Applicant or their subcontractor shall also ensure 49 CFR section 173.185 addressing the transportation of lithium cells or batteries for disposal or recycling, or then applicable regulations, are adhered to, including applicable packaging requirements and hazard communication. In the event of any breakage or damage to individual battery modules, such modules will be placed in individual, non-metallic inner packaging that completely encloses the cell, and will utilize inner packaging that is surrounded by cushioning material that is non-combustible, electrically non-conductive and absorbent. Such inner packaging shall be placed in outer packaging that

meet applicable requirements of CFR part 178, subparts L, M, P and Q, or then applicable regulations, with proper marking denoting package contains damaged/defective lithium-ion battery. In all cases, Project Applicant, or their subcontractor as applicable, shall ensure all applicable OSHA, security, safety and health requirements are complied with during the removal and decommissioning.

BESS HVAC and fire suppression system equipment:

The refrigerant/coolant from HVAC units will be collected into separate containers on site as per the code and industry standard practice. The coolant can be reused after processing. The HVAC units will be sent to the metal recyclers along with other recycling material. Similarly, all fire suppression units will be cleared of the suppression fluids and sent to the suppliers for reuse following the industry standard practice.

Transformers and Ancillary Equipment:

All electrical equipment will be disconnected and disassembled. All parts will be removed from the site and reconditioned and reused, sold as scrap, recycled, or disposed of appropriately, at the Project Applicant's sole discretion, consistent with applicable regulations and industry standards.

5.1.2 Steel Foundation Posts

All structural foundation steel posts will be pulled out to a depth of four (4) feet, removed, processed to appropriate size, and shipped to a recycling facility. The posts can be removed using back hoes or similar equipment. During decommissioning, the area around the foundation posts may be compacted by equipment and, if compacted, the area will be decompact in a manner to adequately restore the topsoil and sub-grade material to a density consistent for vegetation.

5.1.3 Overhead and Underground Cables and Lines

All underground cables and conduits will be removed to a depth of four (4) feet. For the purposes of this decommissioning cost estimate, it has been assumed that all cables will be removed. Topsoil will be segregated and stockpiled for later use prior to any excavation and the subsurface soils will be staged next to the excavation. The subgrade will be compacted per standards. Topsoil will be redistributed across the disturbed area. Overhead lines, support poles, and attachments will be removed from the Project and taken to a recycling facility.

5.1.4 Equipment Foundations and Ancillary Foundations

The ancillary foundations are pile foundations for the equipment pads. As with the other structural steel foundation posts, the foundation piles will be removed to a depth of four (4) feet. All unexcavated areas compacted by equipment used in decommissioning will be decompact in a manner to adequately restore the topsoil and sub-grade material to a density similar to the surrounding soils. All materials will be removed from the Project site and reconditioned and reused, sold as scrap, recycled, or disposed of appropriately, at the Project Applicant's sole discretion, consistent with applicable regulations and industry standards.

5.1.5 Fence

All fence parts and foundations will be removed from the site and reconditioned and reused, sold as scrap, recycled, or disposed of appropriately, at the Project Owner's sole discretion, consistent with

applicable regulations and industry standards. The surrounding areas will be restored to preconstruction conditions to the extent feasible.

5.1.6 Access Roads and Surfacing Around BESS Containers

Facility access roads will be used for decommissioning purposes, after which removal of roads will be discussed with the applicable landowner and one of the following options will be pursued:

1. After final clean-up, roads and other gravel surfaces (including the BESS area) may be left intact through mutual agreement of the landowner and the Project Applicant unless otherwise restricted by federal, state, or local regulations.
2. If a road and other gravel surfaces are to be removed, aggregate will be removed and shipped from the site to be reused, sold, or disposed of appropriately, at the Applicant's sole discretion, consistent with applicable regulations and industry standards. Clean aggregate can often be used as "daily cover" at landfills for no disposal cost. All internal service roads are constructed with geotextile fabric and eight inches of aggregate over compacted subgrade. Any ditch crossing connecting access roads to public roads will be removed unless the landowner requests it remains. The subgrade will be decompacted in a manner to adequately restore the topsoil and sub-grade material to a density consistent for vegetation. Topsoil that was stockpiled during the original construction will be distributed across the open area. Finally, the access road corridors will be revegetated with an approved seed mix.

5.1.7 Substation

Decommissioning of the collector substation will be performed with the rest of the Project. All steel, conductors, switches, transformers, and other components of the substation will be disassembled and taken off site to be recycled or reused. Foundations and underground components will be removed to a depth of four (4) feet. The rock base will be removed using bulldozers and backhoes or front loaders. The material will be hauled from the Facility site using dump trucks to be recycled or disposed at an off-site facility. Additionally, any permanent stormwater treatment facilities (e.g., infiltration ponds and engineered drainage swales) will be removed. Topsoil will be reapplied to match surrounding grade to preserve existing drainage patterns. Topsoil and subsoil will be decompacted in a manner to adequately restore the topsoil and sub-grade material to a density consistent for vegetation.

5.1.8 Transmission Line

The overhead transmission lines, consisting of three-phase conductor (three wires per phase), a ground conductor, and SCADA line, will be deconstructed in the opposite manner that the conductor was installed, using pull trucks, reel trucks, tensioners, and pullers, in addition to standard equipment. Insulators and insulator gangs will also be removed from each tower. It is anticipated that one crew will work on removing the conductors while another crew works on the ground conductor and SCADA. Once the wires are removed, the steel transmission towers will be brought to the ground for disassembly. All removed equipment will be disassembled to sizes suitable for hauling, then loaded onto standard hauling trucks for off-site recycling or disposal. The concrete foundations for each tower will be removed using vibratory extraction to a depth of 48 inches below surface, and the voids will be backfilled and compacted. Disturbed areas, including the temporary compacted access roads, will be decompacted to facilitate revegetation.

5.2 Reclamation

The Applicant will restore and reclaim the site to the pre-Project condition consistent with the site lease agreements. The Applicant assumes that most of the Project site will be returned to farmland and/or pasture after decommissioning and will implement appropriate measures to facilitate such uses. If no specific use is identified, the Applicant will plant unvegetated portions of the site with a seed mix specified in the approved SWPPP, as applicable. The goal of restoration will be to restore natural hydrology and plant communities to the greatest extent practicable, while minimizing new disturbance and removal of native vegetation or vegetation established during operation of the facility. The following reclamation activities will be performed:

1. Minimize new disturbance and removal of native vegetation to the greatest extent practicable.
2. Remove BESS equipment and all access roads up to a minimum depth of 48", backfill with subgrade material, and cover with suitable topsoil to allow adequate root penetration for plants, and so that subsurface structures do not substantially disrupt ground water movements.
3. Any topsoil that is removed from the surface for decommissioning will be stockpiled to be reused when restoring plant communities or agricultural land. Once decommissioning activity is complete, topsoil will be re-spread to assist in establishing and maintaining plant communities.
4. Stabilize soils and return them to pre-construction use, according to the landowner direction.
5. During and after decommissioning activities, install erosion and sediment control measures, such as silt fences, bio-rolls, and ditch checks in all disturbance areas where potential for erosion and sediment transport exists, consistent with storm water management objectives and requirements.
6. Remediate any petroleum product leaks and chemical releases from equipment operation and electrical transformers prior to completion of decommissioning.

Decommissioning and restoration activities at each site will be completed within twelve (12) weeks after the Project is considered a discontinued use.

6.0 Best Management Practices (BMPs)

During decommissioning, erosion and sediment control BMPs will be implemented to minimize potential for erosion of site soils and sedimentation of surface waters and waters of the state. Because decommissioning will entail disturbance of more than one (1) acre of soil, the Applicant will prepare a Stormwater Pollution Prevention Plan (SWPPP) and obtain coverage under the Minnesota Pollution Control Agency (MPCA) National Pollutant Discharge Elimination System (NPDES)/State Disposal System (SDS) general construction permit prior to initiating soil disturbing activities. Potential BMPs to be implemented during decommissioning activities are described below and will be subject to refinement in the SWPPP. The decommissioning team will review the permitting requirements at the time of decommissioning and obtain any other necessary permits, which may include a US Army Corps of Engineers (USACE) Section 404 Permit to Discharge Dredged or Fill Material.

6.1 Erosion Control

Erosion control measures will be refined based on the standard of practice current at the time the SWPPP is developed for decommissioning. All disturbed areas without permanent impermeable or

gravel surfaces, or planned for use as crop land, will be vegetated for final stabilization. All slopes steeper than 4:1 should be protected with erosion control blankets. Restoration should include seed application prior to application of the blanket. All slopes 4:1 or flatter should be restored with seed and mulch, which will be disc anchored.

6.2 Sediment Control

Sediment controls, such as silt fence, fiber logs, dewatering practices, construction entrances, and sedimentation traps and/or basins will be implemented during construction to prevent the transport of sediment off-site during decommissioning activities. Street sweeping/scraping will also be implemented to mitigate potential tracking of sediment onto public roadways.

6.3 Controlling Stormwater Flowing onto and Through the Project

Given the low gradient of the slopes in the project area, controlling stormwater flow that enters the project area will likely require minimal effort during decommissioning activities. Only newly disturbed areas may require new, temporary stormwater control. If necessary, water may be diverted around the project site using diversion berms.

6.4 Permitting

All decommissioning and reclamation activities will comply with Federal and State permit requirements. Decommissioning activities that will disturb more than one acre of soil will require coverage under the MPCA NPDES permit for construction stormwater. The permits will be applied for and received prior to decommissioning construction activities commencing. A SWPPP will be developed prior to filing for construction stormwater permit coverage.

If necessary for decommissioning activities, wetlands and waters permits will be obtained from the USACE or the Minnesota Department of Natural Resources (MNDNR). A Spill Prevention, Control, and Countermeasure (SPCC) Plan for decommissioning will likely also be required for decommissioning work.

6.5 Health and Safety Standards

Work will be conducted in strict accordance with the Applicant's health and safety plan. The construction contractor hired to perform the decommissioning will also be required to prepare a site-specific health and safety plan. All site workers, including subcontractors, will be required to read, understand, and abide by the Plans. A site safety office will be designated by the construction contractor to ensure compliance. This official will have stop-work authority over all activities on the site should unsafe conditions or lapses in the safety plan be observed.

7.0 Timeline and Contacts

It is anticipated that the decommissioning activities for the Facility can be completed in a twelve (12) week period. The estimated costs for decommissioning are tied to assumptions about the amount of equipment mobilized, the crew sizes, weather and climate conditions, and the productivity of the equipment and crews.

8.0 Decommissioning Costs

The estimated costs for decommissioning are tied to assumptions about the amount of equipment mobilized, the crew sizes, weather and climate conditions, and the productivity of the equipment and crews and are calculated using current pricing. In keeping with the requirements of the Freeborn County Code of Ordinance and Minnesota PUC Guidelines, with consideration of The Minnesota DOC EERA, the estimate of net costs should be updated every five (5) years to recognize price trends for both decommissioning costs and the salvage and resale values of the components.

There are currently active markets for scrap steel, aluminum, and copper, used transformers and electrical equipment. Scrap metal prices have been discounted from posted spot prices found on www.scrapmonster.com.

The total estimated cost of decommissioning the Midwater BESS is approximately \$1,215,643 (\$8,104 per MW). Estimated salvage/scrap value of the fencing, medium voltage transformers, substation equipment, and cables is approximately \$596,492. The net decommissioning costs after accounting for resale and salvage values is approximately \$619,152, or \$4,128 per MW.

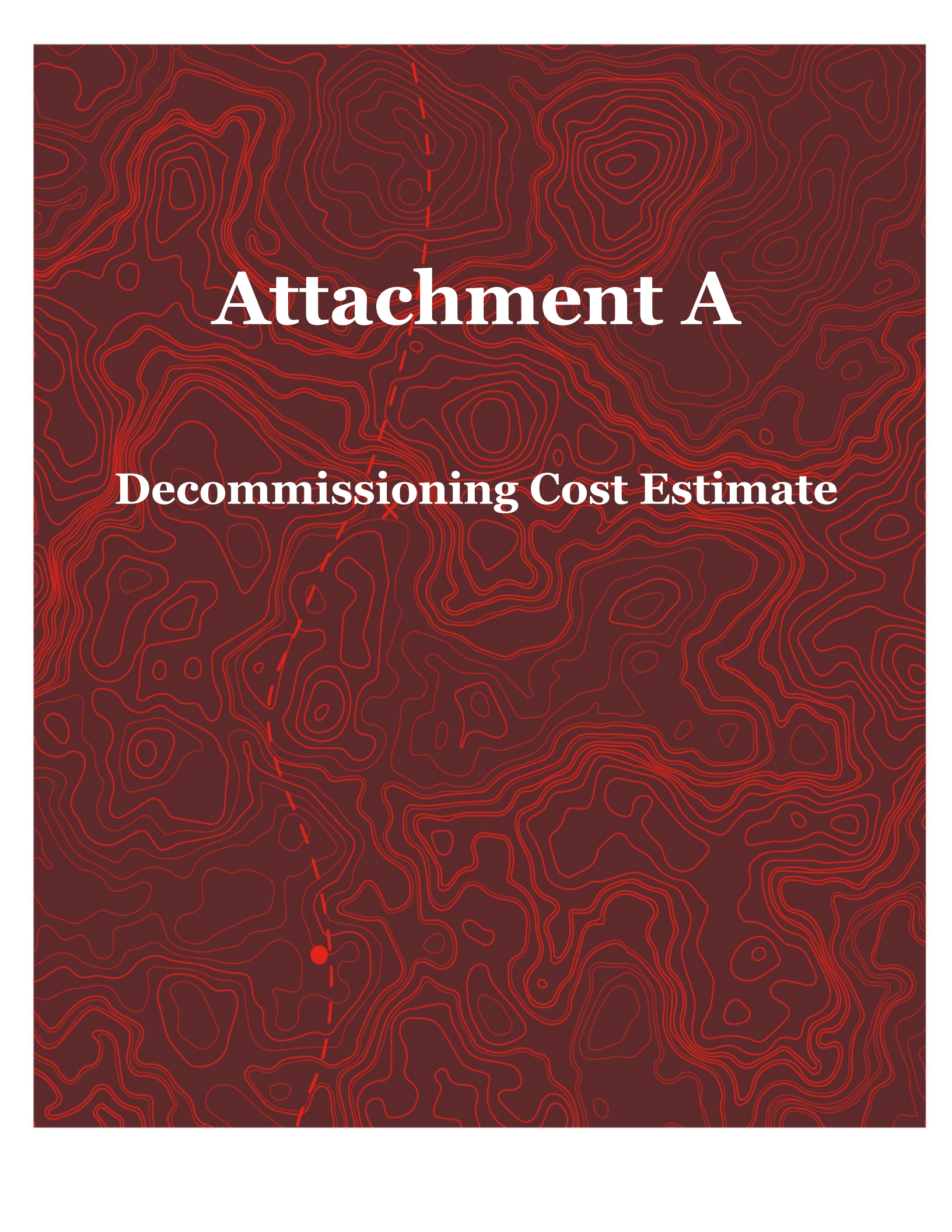
The total estimated cost of decommissioning the Midwater Transmission Line is approximately \$127,184. Estimated salvage/scrap value for the transmission poles and lines is approximately \$67,862. The net decommissioning costs after accounting for resale and salvage values is approximately \$59,400.

9.0 Financial Assurance

Midwater BESS Project anticipates operating the Project for thirty-five (35) years or until the Site Permit expires. Midwater BESS reserves the right to continue to operate the Project, instead of decommissioning, by applying for an extension of required permits.

Consistent with the Solar and Wind Decommissioning Working Group recommendation, EERA recommends that the financial assurance begin in year 10 and that the surety provide for full decommissioning costs prior to the expiration of any site leases. During the 10th year of operation, Midwater BESS will enter into a surety bond agreement, create an escrow account, create a reserve fund, or provide another form of security that will ultimately fund decommissioning and site restoration costs after the Project operations cease, to the extent that the salvage value does not cover decommissioning costs. Under DOC EERA recommendations, a Financial Assurance is not required during the first ten (10) years of operation; however, a bond will be posted no earlier than the 10th anniversary from the Commercial Operation Date (COD) of the Project.

According to the EERA recommendations, a revised decommissioning estimate shall be submitted every five (5) years or any time there is a change in ownership. Each revised plan will reflect advancements in construction techniques, reclamation equipment, and decommissioning standards. The decommissioning cost estimate will also be reassessed and revised to reflect any identified changes in the costs, including current salvage values of materials and equipment. The amount of the Financial Assurance will be adjusted accordingly to offset any increases or decreases in decommissioning costs and salvage values determined during each plan reassessment.

The background of the entire page is a dark red topographic map. It features intricate, swirling contour lines in a lighter shade of red. A dashed red line runs diagonally from the top center towards the bottom left. A solid red dot is positioned on this dashed line in the lower-left quadrant of the page.

Attachment A

Decommissioning Cost Estimate

Midwater Battery Energy Storage System Project

	Quantity	Unit	Unit Cost	Total Cost
Mobilization/Demobilization	1	Lump Sum	\$78,200.00	\$78,200
<i>Mobilization was estimated to be approximately 7% of total cost of other items.</i>				

Permitting

State Permits	1	Lump Sum	\$20,000.00	\$20,000
Subtotal Permitting				\$20,000

Decommissioning will require SWPPP and SPCC Plans. Cost is an estimate of the permit preparation cost.

Battery Energy Storage System (BESS)

Train Crew in Safety and Hazmat	1	LS	\$5,000.00	\$5,000
Disconnect Battery Storage Containers	192	Each	\$382.60	\$73,459
Remove Equipment Skids	48	Each	\$1,167.48	\$56,039
Haul Inverters/Transformers to Transformer Disposal	48	Each	\$286.31	\$13,743
Remove Steel Foundation Posts (Storage Containers and Skids)	2,400	Each	\$16.60	\$39,831
Haul Steel Posts to Metal Recycler (Rochester, MN)	216	Tons	\$8.49	\$1,835
Removal of Underground AC Collector Cables (aluminum)	211,680	LF	\$2.33	\$494,040
Load and Haul Cables for Recycling	265	Tons	\$9.77	\$2,584
Remove and Load Gravel Surfacing from BESS Site (Including Roads)	4,387	Cubic Yard	\$3.00	\$13,167
Haul Gravel Removed from BESS Site	5,483	Cubic Yard	\$10.46	\$57,364
Dispose of Gravel from BESS Site (Use as Daily Cover)	7,107	Tons	\$0.00	\$0
Remove Fencing	13,350	LF	\$7.58	\$101,193
Haul Fencing to Recycling	71	Tons	\$8.49	\$604
Stabilized Construction Entrance	1	Each	\$2,000.00	\$2,000
Erosion and Sediment Controls at BESS Site	6,675	LF	\$3.69	\$24,631
Decompact BESS Site (Including Basins)	7.8	Acres	\$222.97	\$1,739
Grade BESS Site (Including Basins)	341,310	SF	\$0.07	\$24,107
Permanent Seeding at BESS Site (Including Basins)	7.8	Acres	\$3,065.33	\$23,910
Subtotal BESS				\$935,245

Substation

Disassemble and Remove Main Power Transformer(s)	1	Each	\$4,500.00	\$4,500
Haul Transformer(s) Offsite	274	Tons	\$6.23	\$1,705
Haul Transformer Oil Offsite	12,830	Gallons	\$0.09	\$1,155
Dispose of Transformer (Including Oil) (Salvage Value)	1	Each	\$0.00	\$0
Excavate Around Transformer Foundation(s)	1	Each	\$962.50	\$963
Remove Complete Transformer Foundation(s)	70	Cubic Yards	\$152.09	\$10,646
Backfill Excavation Area from Transformer Foundation Removal	120	Cubic Yards	\$43.12	\$5,174
Haul Concrete (Foundations Transformer, Switch Gear, etc.)	142	Tons	\$8.22	\$1,168
Dispose of Concrete from Transformer Foundation	142	Tons	\$18.90	\$2,686
Demolish Substation Site Improvements (fences, etc)	1	LS	\$3,500.00	\$3,500
Demolish Control Building and Foundation	1	LS	\$12,000.00	\$12,000
Remove Medium/High Voltage Equipment	1	LS	\$3,500.00	\$3,500
Remove Structural Steel Substation Frame	1	LS	\$3,500.00	\$3,500
Remove Copper Ground Grid	1	LS	\$3,168.55	\$3,169
Load Copper Wire	20,000	Feet	\$0.79	\$15,706
Haul Copper Wire to Recycling	6.5	Tons	\$8.49	\$55
Haul - Demolition Materials, Removed Equipment & Structural Steel	10	Tons	\$8.49	\$85
Dispose of Demolition Materials & Removed Equipment	10	Tons	\$81.00	\$810
Remove and Load Gravel Surfacing from Substation Site	833	Cubic Yards (BV)	\$3.00	\$2,501
Haul Gravel Removed from Substation Site	1,042	Cubic Yards (LV)	\$10.46	\$10,897
Dispose of Gravel from Substation Site (Use as Daily Cover)	1,350	Tons	\$0.00	\$0
Grade Substation Site	1	LS	\$3,168.55	\$3,169
Erosion and Sediment Control at Substation Site	450	LF	\$3.69	\$1,661
Decompact Substation Site (Subsoiling)	1.0	Acres	\$222.97	\$230
Permanent Seeding at Substation	1.0	Acres	\$3,065.33	\$3,167
Subtotal Substation				\$91,946

Project Management

Project Manager	12	Weeks	\$3,749.00	\$44,988
Superintendent (half-time)	12	Weeks	\$1,762.50	\$21,150
Field Engineer (half-time)	12	Weeks	\$1,634.50	\$19,614
Clerk (half-time)	12	Weeks	\$375.00	\$4,500

Subtotal Project Management **\$90,252**

Standard industry weekly rates from RSMeans.

Subtotal Demolition/Removals **\$1,215,643**

Salvage

Fencing (Chain Link)	71	Tons	\$255.15	\$18,138
Transformers and Inverters	264,000	Pounds	\$0.26	\$69,300
Substation Transformers (Core and Coils)	327,162	Pounds	\$0.26	\$85,880
Substation Transformers (Tanks and Fittings)	87	Tons	\$255.15	\$22,198
Transformers (Oil)	11,493	Gallons	\$0.70	\$8,045
AC Collection Lines (Aluminum)	529,200	Pounds	\$0.74	\$392,931

Subtotal Salvage **\$596,492**

Salvage values are a combination of the following factors; current market metal salvage prices, discussions with national companies that specialize in recycling and reselling electrical transformers and inverters, and the assumption that care is taken to prevent any damage or breakage of equipment.

Total Demolition Minus Salvage **\$619,152**

Notes:

1. Prices used in analysis are estimated based on research of current average costs and salvage values.
2. Prices provided are estimates and may fluctuate over the life of the project.
3. Contractor means and methods may vary and price will be affected by these.

Midwater Transmission Line

	Quantity	Unit	Unit Cost	Total Cost
Mobilization/Demobilization	1	Lump Sum	\$8,300.00	\$8,300
<i>Mobilization was estimated to be approximately 7% of total cost of other items.</i>				
Transmission System				
Remove Overhead Cables	2,672	Feet	\$4.11	\$10,982
Loadout Overhead Cables	53.4	Tons	\$6.16	\$329
Haul Overhead Cables to Metals Recycling (Northwood, IA)	53.4	Tons	\$12.08	\$645
Remove Insulators and Gangs	36	Each	\$854.90	\$30,776
Remove and Disassemble Steel Transmission Poles	12	Each	\$3,462.77	\$41,553
Load Steel Transmission Poles	48	Tons	\$6.16	\$296
Haul Steel Poles to Metal Recycling (Northwood, IA)	48	Tons	\$135.90	\$6,523
Remove and Load Concrete Piles	89	Cubic Yards	\$174.90	\$15,566
Haul Concrete Piles to Landfill (Louisville, KY)	181	Tons	\$11.01	\$1,993
Dispose of Concrete Piles	181	Tons	\$18.90	\$3,421
Backfill Pile Locations	89	Cubic Yards	\$43.12	\$3,838
Erosion and Sediment Controls	668	LF	\$3.69	\$2,465
Till Disturbed Areas to Agricultural Condition	2.8	Acres	\$177.52	\$497
Subtotal Transmission System				\$118,884
Subtotal Demolition/Removals				\$127,184
Salvage				
Steel Transmission Poles	48	Tons	\$255.15	\$12,247
Transmission Lines (Steel)	20	Tons	\$312.98	\$6,260
Transmission Lines (Aluminum)	66,696	Pounds	\$0.74	\$49,355
Subtotal Salvage				\$67,862
<i>Salvage values are a combination of the following factors; current market metal salvage prices, current secondary market for solar panel module</i>				
Total Demolition Minus Salvage				\$59,400

Notes:

1. Prices used in analysis are estimated based on research of current average costs and salvage values.
2. Prices provided are estimates and may fluctuate over the life of the project.
3. Contractor means and methods may vary and price will be affected by these.

Cost Estimate Assumptions

To develop a cost estimate for the decommissioning of the Midwater BESS and transmission line, Westwood engineers made the following assumptions and used the following pricing references. Costs were estimated based on current pricing, technology, and regulatory requirements. The assumptions are listed in order from top to bottom of the estimate spreadsheet. When publicly available bid prices or State Department of Transportation bid summaries were not available for particular work items, we developed time-and material-based estimates considering composition of work crews and equipment and material required. While materials may have a salvage value at the end of the project life, the construction activity costs and the hauling/freight costs are separated from the disposal costs or salvage value to make revisions to salvage values more transparent.

1. Decommissioning costs are based on current pricing. As per the EERA recommendations, an initial financial security will be posted after the 10th anniversary of the project start date. The anticipated life of the Project is thirty-five (35) years.

2. Project quantities are based on Midwater BESS Project Conceptual Site Layout, dated May 10, 2024. The Transmission Line quantities are based on the Midwater BESS Transmission Plan and Profile dated May 29, 2024.
3. A Facility of this size and complexity requires a full-time project manager with part-time support staff.
4. Common labor will be used for the majority of tasks, supplemented by electricians, steel workers, and equipment operators where labor rules may require. The labor rates reflect union labor rates.
5. Mobilization was estimated at approximately 7% of total cost of other items.
6. Permit applications will require the preparation of a SWPPP and a SPCC Plan.
7. Road gravel removal was estimated on a time and material basis. Since the material will not remain on site, a hauling cost is added to the removal cost. Clean aggregate can typically be used as “daily cover” at landfills without incurring a disposal cost. The road gravel may also be used to fortify local driveways and roads, lowering hauling costs but incurring placing and compaction costs. The hauling costs to a landfill represents an upper limit to costs for disposal of the road gravel.
8. The selected disposal facility (WM – Clarks Grove Demolition Landfill) is located in Clarks Grove, Minnesota, approximately fifteen (15) miles from the project site. Hauling costs to the landfill are estimated to be \$7.67 per ton.
9. Erosion and sediment control along the security fence line reflects the cost of silt fence on the downhill side of the security fence.
10. Topsoil is required to be stockpiled on site during construction, so no topsoil replacement is expected to replace the road aggregate. Decompaction is estimated at \$222.97 per acre, and seeding is estimated as \$3,065.33 per acre.
11. The selected metal recycling facility (Marpe’s Metals) is located in Northwood, Iowa, approximately seventeen (17) miles from the project site. Hauling costs to the recycling facility are approximately \$0.07 per ton mile, or \$8.49 per ton. The salvage pricing from ScrapMonster was reduced to reflect the processing required for the posts to fit recycling requirements.
12. The transformers contain either copper or, more commonly, aluminum windings that have significant salvage value. They are typically oil filled, but most transformer recyclers will accept the transformers with oil. The estimated costs include removal of metal frame and conduits feeding the equipment.
13. Medium voltage (MV) equipment and SCADA equipment are mounted on the same equipment skids as the transformers, and they are enclosed in weatherproof cabinets. Their size requires light equipment to remove them. The costs for the removal of the pile foundations are included in the “Remove Steel Foundation Posts” estimate.
14. In this estimate, Westwood assumes the underground collector system cables are placed in trenches at a depth shallower than four (4) feet. Therefore, the estimate includes their full removal. Several cables/circuits are placed side by side in each trench.
15. Metal salvage prices (steel, aluminum, copper) are based on May 2024 quotes from www.scrapmonster.com for the Midwest. Posted prices are three months old. These prices are based on delivery to the recycling facility with the material prepared to meet size, thickness, cleanliness, and other specifications. A reduction of 25% has been taken from this price to reflect the processing by the contractor to meet the specifications.
16. The steel posts and fencing are priced at \$375 per ton based on #1 HMS (heavy melting steel).

17. There is an active market for reselling and recycling electrical transformers with several national companies specializing in recycling. However, we have assumed that the electrical equipment will be obsolete at the time of decommissioning, so we have based the pricing on a percentage of the weight that reflects the aluminum or copper windings that can be salvaged. Pricing was obtained from www.scrapmonster.com. We have assumed a 25% recovery of the weight of the transformers and inverters for aluminum windings.
18. Care to prevent damage and breakage of equipment, batteries, inverters, capacitors, and SCADA must be exercised, but removal assumes unskilled common labor under supervision.