

All Agency Project Request

2013 - 2015 Biennium

<u>Agency</u>	<u>Institution</u>	<u>Building No.</u>	<u>Building Name</u>
University of Wisconsin	Stout	285-0L-9950	Multi-Building
<u>Project No.</u>	14J2F	<u>Project Title</u>	Multi-Bldg Emer Gen Repl

Project Intent

This project installs a new generator and upgrades an UPS system to serve increased campus data center electrical and HVAC loads. It also replaces one obsolete generator serving one building with a larger generator to serve two buildings, replaces one obsolete building generator with a larger generator, and segregates emergency and optional standby loads in five buildings. All generators will be sized to provide emergency power required for life safety purposes and to protect building contents.

Project Description

The transfer switch in each building will be replaced and an additional transfer switch will be installed. Emergency loads and optional standby loads will be segregated, and new emergency distribution panels will be installed. Standby building loads may include steam condensate pumps, heating pumps, sump pumps, sewage ejection pumps, air compressors, telecom equipment, and building automation control panels. Natural gas service lines will be extended from nearest gas mains to the new generator locations. Project work specific to each building is outlined below.

BOWMAN HALL (285-0L-0003): The project replaces the 19kW, 480V natural gas water cooled generator located on the first floor level with a new approximate 185kW natural gas air cooled unit located on a pad outside the building and provides appropriate visual screening. This generator will also be connected to the adjacent Administration Building (285-0L-0018) where two 480-208/120V step-down transformers and two distribution panels will be installed.

GENERAL SERVICES BUILDING (285-0L-0089): The project replaces the 25kW, 208V natural gas water cooled emergency generator located on the first level with a new approximate 100kW natural gas air cooled unit located on a pad outside the building and provides appropriate visual screening.

MILLENNIUM HALL (285-0L-0011): This project installs a new approximate 100kW, 480V natural gas air cooled emergency generator located on a pad outside the building with appropriate visual screening. The existing 50kVA UPS serving the data center will be replaced by an approximate 80kVA UPS unit.

UNIVERSITY SERVICES BUILDING (285-0L-0091): This project segregates the emergency and optional standby loads fed by the existing 57kW, 208/120V natural gas generator. It provides additional distribution to buildings loads considered critical to campus operations in a campus-wide power outage.

Project Justification

The generators in General Services and Bowman Hall were installed in 1975 and 1983. They require increased maintenance and are difficult to repair since replacement parts are no longer available. These generators are beyond their useful lives and they do not have capacity to serve emergency and optional standby loads. The emergency power distribution systems do not meet current code since all critical loads are fed from one panel. The current code requires separate emergency and optional standby distribution systems. Since the Administration Building does not have an emergency generator, battery backup egress and exit lighting must be tested and maintained on a regular basis straining maintenance staff. The existing 60kW emergency generator in Millennium Hall does not have capacity to serve the cooling units for the campus data center during a power outage. This causes a rapid air temperature rise in the data center risking damage to the server equipment. The generator in University Services does not have capacity to serve critical university operations during a campus-wide power outage. Operation of these generators is essential to maintain facility life-safety, critical building systems and critical campus IT functions during a power outage.

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A/E Consultant Requirements

A/E Selection Required?

Consultants should have specific expertise and experience in the design and coordination of electrical power distribution systems, including the installation of emergency generation, as part of a design team. Work includes site surveys, acquiring field data, and verifying as-built conditions to assure accurate development of design and bidding documents, and production of necessary design and bidding documents. Consultants should indicate specific projects from past experience (including size, cost, and completion date) in their letter of interest and when known, include proposed consulting partners and specialty consultants.

Commissioning

- Level 1
 Level 2

Project Budget

Construction Cost:	\$1,417,800
Haz Mats:	\$5,000
Construction Total:	\$1,422,800
Contingency: 15%	\$212,100
A/E Design Fees: 9%	\$135,200
DFD Mgmt Fees: 4%	\$65,400
Equipment/Other:	\$0
	\$1,835,500

Funding Source(s)

	<u>Total</u>
GFSB - Facilities Maintenance & Renovation [Z060]	\$1,835,500
PRSB - []	\$0
Agency/Institution Cash []	\$0
Gifts	\$0
Grants	\$0
Building Trust Funds [BTF]	\$0
Other Funding Source	\$0
	\$1,835,500

Project Schedule

SBC Approval: 11/2014
A/E Selection: 12/2014
Bid Opening: 01/2016
Construction Start: 03/2016
Substantial Completion: 09/2016
Project Close Out: 12/2016

Project Contact

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Project Scope Consideration Checklist

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1. Will the building or area impacted by the project be occupied during construction? If yes, explain how the occupants will be accommodated during construction.

All project work will be coordinated through campus physical plant staff to minimize disruptions to daily operations and activities.

2. Is the project an extension of another authorized project? If so, provide the project #...

3. Are hazardous materials involved? If yes, what materials are involved and how will they be handled?

Required hazardous materials abatement has been included in the estimated project schedule and project budget. Comprehensive building survey inventory data IS NOT available on Wisconsin's Asbestos & Lead Management System (WALMS) <<http://walms.doa.state.wi.us/>>.

4. Will the project impact the utility systems in the building and cause disruptions? If yes, to what extent?

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5. Will the project impact the heating plant, primary electrical system, or utility capacities supplying the building? If yes, to what extent?
6. Are other projects or work occurring within this project's work area? If yes, provide the project # and/or description of the other work in the project scope.
7. Have you identified the WEPA designation of the project...Type I, Type II, or Type III?
Type III.
8. Is the facility listed on a historic register (federal or state), or is the facility listed by the Wisconsin Historical Society as a building of potential historic significance? If yes, describe here.
9. Are there any other issues affecting the cost or status of this project?
10. Will the construction work be limited to a particular season or window of opportunity? If yes, explain the limitations and provide proposed solution.
11. Will the project improve, decrease, or increase the function and costs of facilities operational and maintenance budget and the work load? If yes, to what extent?
Completion of this project will decrease operational maintenance costs.
12. Are there known code or health and safety concerns? If yes, identify and indicate if the correction or compliance measure was included in the budget estimate, or indicate plans for correcting the issue(s).
13. Are there potential energy or water usages reduction grants, rebates, or incentives for which the project may qualify (i.e. Focus on Energy <<http://www.focusonenergy.com>> or the local utility provider)? If yes, describe here.
14. If this is an energy project, indicate and describe the simple payback on state funding sources in years and the expected energy reduction here.