

Emergency Generator Replacement

Eastern Kentucky Veterans Center – Hazard, KY

Owner: Kentucky Finance Cabinet - DECA
User Agency: Veterans Affairs
Contacts: David Marshall, DECA
Phone: 502.564.3155
Email: David.Marshall@ky.gov
Building Area: NA
Construction Cost: \$ 333,395
Project Status: Completed 2018
Project No.: C8UV

Project Description:

The existing emergency generator had experienced failure because it was oversized and did not have fixed load bank capability.



Engineering Highlights:

The existing 1250 KW diesel generator was oversized and was not able to be properly exercised resulting in destruction of the unit. Diesel generators, if not exercised while fully loaded will experience “wet stacking” which is a build up of carbon deposits in the engine cylinders. This resulted in a total failure of the existing generator.

The design of the replacement generator included reviewing three years of generator test data with recorded loading, that indicated a smaller generator would be sufficient. Three alternative arrangements were reviewed that included; two parallel diesel generators, two parallel natural gas generators, or one diesel generator in existing housing with automatic load bank. Because of limited space behind the center and less invasive demolition would be required, the one diesel generator with load bank was selected.

Because the facility is required by statute to have continuous full-time emergency power available a temporary generator was already in place. This unit was wired at the existing generator location and would have to be relocated to allow the existing generator to be removed and replaced. This project included the new temporary generator to be connected to the switchgear located inside the building feeding three existing automatic transfer switches.

A very tight sequence of construction was created to meet all the facilities requirements of not being without emergency power for longer than a four-hour time period.