



Hager Hill Diesel Facility
Big Sandy CTC – Paintsville, KY

Owner: Kentucky Finance Cabinet - DECA
User Agency: KCTCS
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Building Area: S.F.
Construction Cost: \$ 162,300
Project Status: Completed
Project Number: CH83



Engineering Highlights:

HVAC:

The Diesel Facility had been experiencing vary high humidity problems ever since it was built. N3D Group performed an extensive review of the facility and performed completely new load analysis as well as review of all existing ductwork layouts and systems. N3D uncovered two large contributors to the humidity problems.

The first was the absence of four dampers between the space above ceilings leading to the roof. These dampers were missing in the building relief air system that exhausts excess air during economizer cycle. Without these dampers installed, there were basically large holes in the roof when during night setback cycle cool air would dump into the building. This project provided new dampers and controls so that at night setback the dampers would seal the building.

The second was the building's HVAC system was greatly oversized. The air-conditioned building areas were conditioned by two VAV air handlers. AHU-1 was 29,000 CFM and AHU-2 was 17,000 CFM. The entire building needed only 28,240 CFM for all its air conditioning needs. Thus AHU-2 was decommissioned and the supply ductwork combined so all air would be served by AHU-1. Many rooms had 50% too much air, so air was reduced by 50% and ductwork modifications made to redistribute the air evenly in the rooms.