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Case Study

Lights on Cowboys

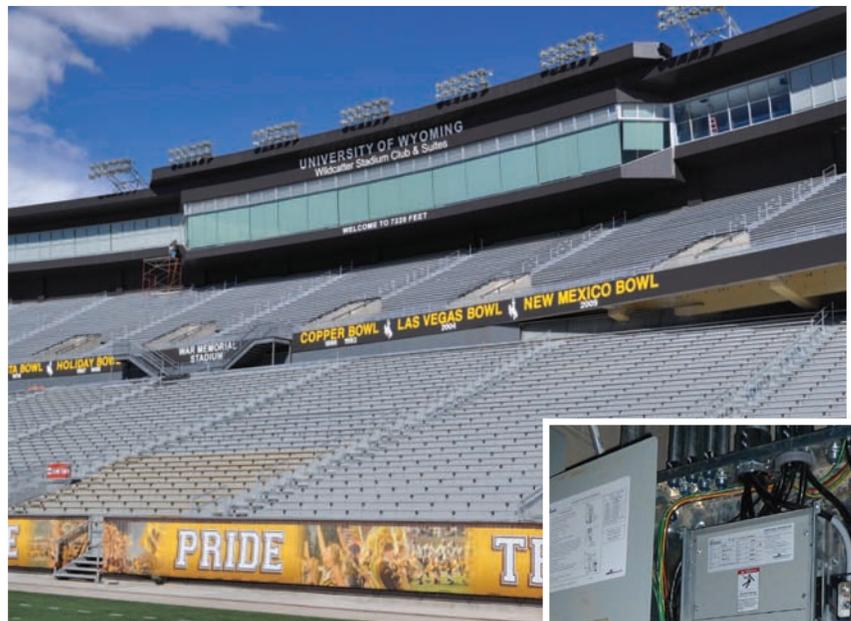
When the University of Wyoming Cowboys meet rival teams on Jonah Field at War Memorial Stadium in Laramie, it is important to keep the lights on for tv cameras airing the big game. More importantly, in the case of an emergency, the more than 30,500 attendees need to be able to exit the stadium safely.

The principle of selective coordination is to minimize the loss of power to only those loads that must be removed if there is an electrical fault. Both the 2005 and 2008 National Electrical Code (NEC) were expanded for overcurrent protective device selective coordination to include power circuits supplying vital life-safety loads (700.27 emergency systems, 701.18 legally required standby systems). This includes places of public assembly such as schools and sports arenas.

Selective coordination is critical for the reliability of the electrical distribution system and must be analyzed.

In their renovation of the 60-year-old stadium, the University of Wyoming facilities engineers utilized the Cooper Bussmann Quik-Spec Coordination Panelboard (QSCP) to meet selective coordination requirements. The renovation design included the addition of new luxury suites and club seating for visiting alumni plus emergency lighting, fire alarm, and notification systems.

The Quik-Spec Coordination Panelboard simplifies full fuse system selective coordination from branch to source. By adhering to the Cooper Bussmann published fuse selective coordination ratios, there is no need for plotting extensive time-current curves or undertaking costly studies. Flexible configurations (up to 600Vac/200A/200kA short-circuit current rating, or SCCR) allow for efficient specification. The UL Listed Quik-Spec Coordination Panelboard addresses the NEC selective coordination requirements for a number of applications, including Emergency, Legally Required Standby,



In order to meet the selective coordination requirements at Jonah Field at the University of Wyoming, engineers used the Cooper Bussmann Quik-Spec Coordination Panel. All photos: Cooper Bussmann

Healthcare Essential Electrical and Critical Operations Power Systems (COPS) per 700.27, 701.18, 517.26, and 708.54. Increased workplace safety is another key feature of the new Quik-Spec Coordination Panelboard, which uses the IP20 finger-safe Low-Peak CUBEFuse in conjunction with an ampacity-rejecting Compact Circuit Protector Base (CCPB) UL 98 disconnect. The patented fuse ampacity rejection feature matches important standard branch circuit amp ratings to help prevent overfusing while maintaining optimum protection. The CUBEFuse and CCPB are designed with a safety interlock feature to prevent removal of the fuse while energized.

“Utilizing the QSCP panelboards allowed the university to comply with selective coordination



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requirements for life safety loads easily, saving the university time and money,” says Mark Jeffrey, inside sales with Ryall & Cuneo, Denver, manufacturer’s representative for Cooper Bussmann. “We worked with the design engineers at the local office of M-E Engineers who have specified Cooper Bussmann coordination panels for nearly all of their projects compliant with the 2005 or 2008 NEC, particularly larger size panels that fit the needs of stadium and arena projects.”

For the University of Wyoming renovation project, M-E Engineers specified six 200-A MLO, 480Y/277V 3-Phase, 4-Wire Quik-Spec Coordination Panelboards. The short-circuit current rating (SCCR) is 50 kA per panel.

“If there is a fire or other emergency, we do not want to unnecessarily lose life

safety loads due to a lack of selectively coordinated overcurrent protective devices,” says Jeffrey “The QSCP assures the university against experiencing a cascading electrical event and unnecessary power loss.”

Jennifer Coast, PE and manager, capital projects, University of Wyoming, and her contractor, Interstates Construction Services, Inc., of Ft. Collins, Colo., were pleased with the outcome.

“We were able to specify the enclosures to ship within one week of order to start installation fast,” says Coast. “We are now on schedule to open the stadium expansion in time for the 2010 season.”

Kelley Slentz, electrical project manager for Interstates Construction, pointed out the QSCP’s footprint is the same size as a traditional circuit breaker panel, mak-

ing it easy to slip into construction plans. He also identified the panelboard’s safety features that will benefit the university’s electrical maintenance team. The QSCP’s current-limitation ability reduces arc-flash hazards and minimizes damage to equipment and circuits.

“This innovative panelboard offers numerous safety benefits including fuse ampacity rejection to prevent over-fusing and a fuse/disconnect interlock to prevent fuse removal while the circuit is energized,” says Slentz. “The finger-safe Low-Peak CUBEFuse with high interrupting rating is used in the UL 98 Listed Compact Circuit Protector Base. Plus lockout/tagout provisions ease OSHA compliance.”

With the Cooper Bussmann Quik-Spec Coordination Panelboards in place, the lights will be on throughout the 2010 Cowboy football season beginning with the first game on Sept. 4.

Information provided by Cooper Bussmann.

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Critical Low Voltage Circuit Protection

Cooper Bussmann Quik-Spec™ Coordination Panelboards

Meeting NEC® Selective Coordination requirements for emergency and standby power systems is easy with the Quik-Spec Coordination Panelboard (QSCP). With the same footprint as traditional circuit breaker boards, the QSCP is available in flexible configurations with up to 400A mains and 200kA SCCR in NEMA 1 and 3R enclosures, 18, 30 or 42 branch positions and 1-, 2- and 3-pole fused disconnects up to 100A.

All QSCP configurations can ship within 10 business days with Quik-Ship service.

