Dry Fork Station is a coal fired power station five miles north of Gillette, Wyoming along State Highway 59. Concrete beams were constructed in October 2008. Freezing and thawing of water collected in anchor bolt sleeves and concrete pockets generated damage to the concrete beams during winter months. The beams are constructed of approximately 1,000 yards of concrete and reinforcing steel and sit approximately 50 ft. above grade on six 12' x 15' concrete reinforced columns. The dimensions of the reinforced concrete beams are 35' x 10' x 12'. A total of 4.5 cu. yard of concrete repair material was needed to restore the beams to the designed structural condition.

The Sika Solution

The product utilized for this repair was Sikacrete 211 SCC Plus. Sikacrete 211 SCC Plus is a single component self-consolidating concrete in a bag. This product is additionally enhanced with silica fume, polymer and a penetrating corrosion inhibitor. For a form and pour application the excellent consolidating characteristics of this material was the main reason for its selection. Formwork with a bird’s mouth opening was created to receive mixed material. The formwork was sealed to prevent loss of moisture from the mixed material. The work area was tented and heated to provide an ambient temperature environment that was ideal for concrete replacement. An SSD condition was achieved by filling the forms with water, the night prior to the pour. Test batches were performed a day in advance, to familiarize the crew with the handling of the material and confirm performance properties of Sikacrete 211 SCC Plus. Ninety seven percent of the reported one day strength was achieved in 17 hours. Sikacrete 211 SCC Plus was successfully placed into forms continuously in a single pour. There were no shrinkage cracks developed from the massive continuous
Case Study

Sikacrete® 211 SCC Plus is a one-component, self-consolidating concrete containing factory blended coarse aggregate. This self-consolidating concrete material is silica fume and polymer modified and also contains a penetrating corrosion inhibitor.