Energy Storage Systems

Gore Mountain North Creek Ski Bowl

Johnsburg, NY

RAN Fire Protection Engineering was tasked with providing new fire detection design and alarm notification system, along with hydraulic calculations and sprinkler and piping location plan in compliance with NFPA 13. RAN also assisted in developing the required design criteria for the water storage tank per NFPA 22 requirements, as well as the design of carbon monoxide detection systems per New York Building Code. RAN also assisted in the Bid Phase portion of this project, by responding to bidders, issuance of addenda, and assisting in the review of contactor bid packages.

Nuclear Facility

RAN has also been involved in projects at a Department of Energy nuclear facility which incorporated the use of energy storage systems. Due to the inherent nature of the facility, a massive failure of an energy storage system would result in a thermal runaway reaction that needs to be avoided and mitigated. Protection evaluations involving site selection, control or extinguishment of a system fire, and protection of the surrounding structures were critical criteria utilized for level of protection necessary.

Energy Storage Locations

RAN's engineers have evaluated fire protection concepts for two containerized energy storage systems within racks of a 40-foot shipping container customized for the intended purpose. The project entailed evaluating the effectiveness of dry chemical, wet chemical, clean agent, aerosol, carbon dioxide and water mist systems for the protection of the energy storage systems. This project needed to incorporate the city fire department response capability, impact on adjacent buildings, existing building sprinkler systems, available firefighting water supply, maintenance requirements and listing requirement of the energy storage system.

Phone: (518) 275-0791 www.ranfpe.com 417 New Karner Rd Albany, NY 12205 Fax: (518) 275-0792

Energy Storage Systems

Waste to Energy Plant

Kent, MI

RAN Fire Protection Engineering provided fire protection engineering consulting and design services for the proposed project. RAN divideded the provided services into two scopes, in order to define the work for different portions of the facility. The first scope, Facility Wide Fire Protection Assessment, included site visits with the intent of visiting the facility and documenting the condition of the existing facility fire protection systems. The assessment of the facility and existing fire protection systems also helped to determine required fire protection designs options, which were then provided to the owner in a report.

The second scope, Fire Protection Design Services, included the design of fire protection system modifications. The final design was based on the design criteria determined during the Scope of Work #1 assessment. Additionally, the second scope consisted of the design of fire suppression systems to protect two MCC rooms within the facility. This final design scheme was based on the design scheme chosen by the Owner following the Scope of Work #1 assessment.

Energy Storage Systems

Staten Island, NY

RAN Fire Protection Engineering has provided professional fire protection engineering and consulting services for a variety of Energy Storage Systems located throughout Staten Island. The scope of work included the design of fire detection systems for the various project locations. The fire detection systems utilized infrared (IR), ultraviolet (UV), and both IR/UV devices, which is monitored by a fire alarm system and reports back to the Fire Department.

In addition to the design of fire detection systems, RAN also designed fire spray extinguishing systems for a few of the project locations. The basis of design for these projects anticipated the use of a fire spray extinguishing system without a connection to an automatic water supply. RAN verified the basis of design with the NYFD prior to system layout.

Battery Recycling Facility

Rochester, NY

The project was for a lithium-ion battery recycling facility. RAN Fire Protection Engineering provided professional engineering services for a feasibility study for a localized fire extinguishing system for the facility. Additionally, RAN provided professional engineering services for the design of an automatic dry chemical local extinguishing system.

Phone: (518) 275-0791 www.ranfpe.com 417 New Karner Rd Albany, NY 12205 Fax: (518) 275-0792