

National Grid Begins Series of GIS Substation Replacements

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National Grid is in the midst of replacing the outdoor 345 kilovolt Gas Insulated Substation (GIS) at the Brayton Point generating station in Somerset, Mass. with a new, state-of-the-art indoor facility.

The GIS, originally built in the early 1970s to support the New England bulk transmission grid, is approaching the end of its useful life. It also has been a focus of National Grid's efforts to reduce releases of sulfur hexafluoride gas (SF6) into the environment. SF6, which is used to insulate the substation, is a greenhouse gas that has been identified by the EPA as a contributor to climate change.

"The additional investment in an indoor facility will be more than offset by the benefits we'll accrue," said Mahoney. "These include protecting equipment from the adverse impact of the environment thus extending the life of the assets, allowing us flexibility in scheduling maintenance, and reducing future emissions of SF6 gas into the environment."

A new control building also will be installed to house state-of-the-art control and protection equipment for the substation. This is the first of several similar transmission substation replacement projects in New England and is expected to be completed in mid-2005.

The project also is the first to be performed under an EPC contract, where a contractor provides "one stop shopping" by handling engineering, procurement and construction for the entire project.

"The EPC contract provides sole responsibility to one contractor for the duration of the project," said Marc Mahoney, vice president of Transmission Network Asset Management. "This gives us the ability to safely and successfully address a variety of issues for this large-scale replacement project."

Studies are planned to evaluate the possibility of replacing transmission GIS facilities in Saugus, Mass. and Tewksbury, Mass.