

Installation of Cables System connections to Gas Insulated metal-enclosed Switchgear (GIS)

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ABSTRACT

The Installation of Cables System connections to Gas Insulated metal-enclosed Switchgear (GIS) requires the coordination of several partners: cable system manufacturer, GIS manufacturer, and user.

This paper relates how it is performed, from the implementation design, to the after installation tests, through the testing during manufacturing, and the installation works.

The different standards involved are referenced and this paper reviews the additional technical requirements that are needed to install and operate a connection between a cable system and a GIS as experienced in the French network.

INTRODUCTION

The GIS substations are more and more used specially in urban areas because of their reduced footprint as compared to open air substations. In this context they usually are connected to the network through insulated cables.

The connection of underground cables requires GIS terminations which are part of the cable system.

The GIS manufacturer is different from the cable system manufacturer.

The international standard IEC 62271-209 defines the limits of supply of each manufacturer. This standard does not address all the issues that can be encountered when installing such interface, like civil work constraints. A revision of this standard is starting [1].

The purpose of this paper is to review the additional technical requirements that are needed to install and operate a connection between a cable system and a GIS in the French network.

We always quote the SF6 pressure as relative pressure.

GENERAL CONSIDERATIONS ON THE INSTALLED TERMINATIONS

The typical installation of the cable system connection to a GIS is shown on fig.1.

The GIS unit is in a building, installed on an intermediate floor. The cable connection enclosure is on the same level, generally indoors.

The cable route is at the lower level just below the GIS. There are holes in the GIS supporting floor to access the cable termination enclosure from the cable route.

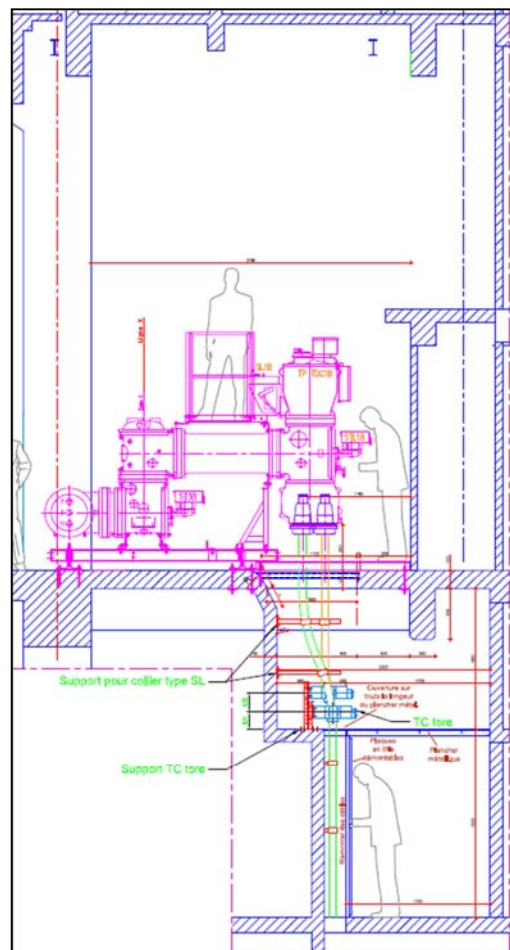


Fig.1: typical installation of a GIS