Convenient Installation For Transition Piece of Jacket Platform

Yuanyuan Xie, Chen Gong, Lixia Li, Yong Wang
China Offshore Oil Engineering (Qingdao) CO.LTD.
Qingdao, Shandong, China

ABSTRACT

Transition Piece is the key section for conjuncting module to jacket, since the inaccuracy of its installation could influence the subsequent installation for module. The key point in the installation of transition piece is to measure the span between steel pipes. The method now generally used is to take the nearest points on the outside of two jackets pipes as measuring points to measure the span between steel pipes(Wei XB et al. 2007). However, the generatrix which passed the nearest point is identified by eyeballing in the method, it maybe generate inaccuracy, and it is complex. With the improvement of Total Station(measure equipment) by COOEC, the dummy centre of the pipe can be simulated by AutoCad so that distance between the centre of the pipe can be measured out directly to make the inaccuracy minimal. The paper take the installation of transition piece in LD5-2 WHPB project as an example to approve that the method is reasonable.

KEY WORDS: Total Station; transition piece; span between steel pipes; offshore platform

INTRODUCTION

There are two traditional methods used in platform installation which are float over technology(Fang XM et al. 2006) and lifting method. In float over technology, the platform is delivered exactly on top of the jacket by large barge and down to the jacket by ballasting. The float over technology is largely used in the installation of heavy platform. However, in the lifting technology, the platform is hoisted on top of the jacket by floating crane and down to the jacket, while there is transition piece between the jacket and platform. The transition piece is used to joint the column of the module and the gradient pile of the jacket, and it is made up of 3 parts which are the upper one jointed to the platform, the middle one jointed to the jacket, and the toe filled into the jacket for directing, shown in fig.1. The transition piece is used to adjust the elevation of the module and the span between steel pipes of the jacket.

USUAL METHOD FOR TRANSITION PIECE INSTALLATION

In the traditional way, the theoretical distance between the closest points on the two jacket piles is measured out, which is shown in figure 2. The compare of theoretical and measured results decides where the cutting points should be. The shortcoming of this method are shown below:
1. The closest points is decided by eyeballing, and error is inevitable.
2. The diagonal can't be adjusted.
3. It is too complex to operate, especially for freshman.

THE PROCEDURE OF FIXING TRANSITION PIECE

The paper uses the transition piece fixing of LD5-2 WHPB as an example to approve that the method is reasonable.