Tribute to Peter Green from Dave Hadden

Peter was the first party leader-surveyor that I worked with after joining Faireys as a fresh new graduate from Glasgow University in November 1976.

The job was an unusual one. A ~400 station geodetic survey all within about 20m x 20m. It was at the "pile cap" of the Heysham B 1 power station, which was under construction. A very interesting project.

The pile cap was the top of about 400 long vertical tubes, each about 600mm diameter and 200mm apart. All embedded into concrete. They went down into the heart of the reactor and when operational, the atomic fuel rods would be passed down the tubes to make the whole system work.

The coordinates of the tops of each tube had to be known to a very high accuracy as the remote controlled device which fed the rods into the tubes had to be positioned perfectly over the tubes else the rods would not fit.
The rods were to be fed into the reactor in balanced patterns of drops to ensure an even burn of the fuel.
The tolerances were sub mm.

Peter and the Fairey team devised an ingenious and innovative way to do the survey.

All pile caps positions were measured by simultaneous theodolite observations from 4 pillars located just outside the survey area. The targets were special "Fairey spinning targets" each placed in a Fairey designed locating plate at the top of each cap. I think we did just 4 tubes at a time. (I never used better targets).

The distances between each pile cap were also measured - by a fixed bar attached to a spring micrometer.

Peter ran the job like clockwork and with help from Maidenhead, computed the final positions via a least squares adjustment. - Not the whole network "in one go" of course. Just groups of 9 tube tops at a time. Computers were somewhat less powerful in those days !

The Survey went fantastically well. Accuracy was phenomenal.
I'm sure there was a photo of the job in one of the company newsletters.

A couple of fun extras about the job...
1) We discovered that one of the tubes was "out of position" by at least a couple of inches, which made the engineers panic. All the top managers came to look and their faces showed a total disbelief at what we had found. Apparently, that tube was so far out of position that the fuel rod machine might not be able to use it. Potentially, that meant that several fuelling patterns could not be used, which would impact on the efficiency of the plant. (i.e. An Expensive critical construction error)
I have no idea if they ever found a solution and thankfully it wasn't our problem.

2). I brought my then girlfriend, now wife, to the job one weekend. She came on site to help one day, which caused another bit of a panic. We had all just walked in as normal, vaguely waving our passes at the security men, but later that day someone noticed that our new extra

assistant was - a girl ! Shock and horror. Ladies were apparently not allowed past the clean conditions check area and it was a “men only” site.
Once Peter explained our ignorance and promised that it was a “one off”, it was all taken in good humour and no harm was done. I’m not sure that we were the first people to ever have a girl on a construction site but we were certainly the first on that one !
We work in a different world today.

Peter is a sad loss. I worked with him on some other projects too and learned a lot from him. I’ll always remember him. Super guy.

Dave Hadden
27th January 2020