



NJUG CASE STUDY

CASE STUDY 49: Protecting Against Vibration Exposure

Winner of the 2010 NJUG Safety Award

The National Joint Utilities Group (NJUG) is the UK industry association representing utilities on street works issues. The 39 companies¹ we represent work to deliver gas, electricity, water and telecommunications to both individual consumers and UK plc.

NJUG members need to continue to drive forward further improvements. We have therefore developed the NJUG Vision for World Class Street Works, which revolves around six main principles:

1. Safety is the number one priority
2. Utilities deliver consistent high quality
3. Utilities work together and in partnership with local authorities and contractors to minimise disruption
4. Utilities keep the public fully informed on all aspects of works
5. Utilities maximise use of sustainable methods and materials
6. Damage to underground assets is avoided

This case study is an example of NJUG delivering on these principles and turning the vision into reality.

Overview:

HAVS is an irreversible condition affecting nerves and circulation caused by vibration. The effect is cumulative – each exposure can worsen the condition. Harm can be caused by as little as 15 minutes exposure per day for some tools and risk can therefore be eliminated / reduced by controlling exposure. This condition affects people who regularly use high vibration equipment. As such WHC Hire Services has developed a program of preventative measures over the last 9 years to ensure Severn Trent Water (STW) is not being over exposed to vibration, involving both management and operatives.

Case Study:

WHC purchased the latest Vibration Testing Equipment. Then by installing concrete, stone and tarmac test beds within WHC's premises, they were able to field test all equipment in its working environment to give accurate readings of the vibration impact of each piece of equipment on its operators.

WHC provides a 3 monthly service, maintenance, vibration test and exchange program, which has resulted in improved productivity and reduced repair costs. This enables them to monitor the condition of the equipment effectively, thus ensuring the efficiency and reliability of the equipment. WHC ensure each piece of hand arm vibration equipment is tested for vibration levels every 3 months to the ISO standard by IOSH accredited engineers providing accurate and up to date EAV and ELV. Test results are then downloaded to WHC's database where upon a vibration certificate is produced to accompany each piece of equipment.

¹ NJUG's current members are Energy Networks Association (representing electricity and gas), Water UK (representing all water and wastewater companies), National Grid, Openreach, and Virgin Media. Our associate members are Clancy Docwra, Skanska Utilities, Balfour Beatty, Morrison Utility Services, Morgan Est, Nacap, PJ Keary, First Intervention, Carillion, Enterprise, Laing O'Rourke, Amec and SQS. Including members through trade associations, NJUG represents 39 utility companies, and 13 utility contractors.

STW had been monitoring HAVS on a paper based system where the individual had to time themselves on the equipment and calculate the vibration magnitude of the piece of equipment with the time they spent on that equipment and convert that into the HSE point system. Needless to say, this was very complicated, not best practice and not being done consistently throughout the business. In September 2008 STW had come to a point where they could not cope with the number of HAVS claims they were getting. The loss of the individual in roll was costing up to £500k per individual and it was also putting their staff at risk.

STW has since implemented the Reactec Monitoring System into their daily working practice as it offered the latest way to monitor the HAVS exposure and convert the magnitude of the equipment into the HSE point system which was user friendly and safe to use. This has become part of the workforces PPE.

Tools are fitted with a Reactec Tool Tag, programmed by WHC who then convert the test data using their software and import it via a PDA onto the Tag, to the tools vibration output. Each piece of equipment then has the EAV, ELV and points information so not only do management have the vibration data information but also the operators using the equipment.

At the start of each shift, an employee simply swipes themselves out a HAVmeter from the base station which they keep with them for the duration of the day. The HAVmeter connects magnetically with the tool tag giving a cumulative display in real-time of the operative's vibration exposure. Its simple traffic light display based on the HSE 'points' system indicates when the daily limit of EAV and ELV has been reached. It is designed for use with multiple tools giving a cumulative running points total in line with HSE guidelines and if desired the HAVmeter can keep a record of vibration exposure with details such as the daily points total and exposure received. At the end of the shift, the HAVmeter is returned to the base station where all of the information can be downloaded using Toolminder Software.



WHC work with Severn Trent Water to ensure they supply them with the highest quality tools with the lowest vibration frequency possible. Their test engineers are all IOSH trained for vibration testing by an IOSH recognised company. Alongside this WHC modify STW's equipment to reduce the vibration levels by upgrading things such as bushes and dampeners to ensure they get the best performance and lowest vibration levels possible.



WHC test beds

