Subway Tunnel Lighting Upgrade – Award of Contract

Date of meeting 9 October 15  Date of report 22 September 15

Report by Assistant Chief Executive (Operations)

1. Object of report

To recommend that the Partnership approve the award of contract for subway tunnel lighting upgrade and associated installation works to DP Services (Scotland) Ltd.

2. Background

2.1 Existing System

The existing lighting system in the subway tunnels was installed in 2006/7 and comprises of approximately 1850 light fittings which are spaced at 12 metre intervals throughout the tunnel system. The lighting is provided for the regular line and tunnel checks, including walking to and from places of work; and also in the case of an emergency where there is a need to de-train passengers. The lighting is also used during periods when speed restrictions are in place to allow the driver to observe any unusual conditions in the system.

The existing lighting infrastructure in the tunnels is not efficient and requires regular and relatively costly maintenance to keep it in an operational condition. The light fittings themselves are of a solid construction so in general the enclosures are in good condition. However, the internals of the fittings require high maintenance and are inefficient. There are a range of modern equivalents that provide up to 12 times the life while using 60 to 70% less power of the existing lighting system and hence result in significant cost savings as well as reducing the carbon footprint of SPT.

2.2 Aims and objectives

The overall aims and objectives of the lighting upgrade works are to:

- Renew life expired assets and upgrade installations to meet current technology standards and operational requirements.
- Introduce an improved lighting system that will continue to provide a safe working and walking environment for all employees and contractors.
To standardise, as far as possible, the fixtures and fittings to enhance maintainability and stock holding

To introduce an energy efficient solution in order to reduce on-going energy consumption costs

To reduce maintenance costs while improving the performance and reliability of the lighting system

Reduce the carbon footprint of the SPT organisation

This report sets out the procurement process and recommendation to award the contract for the works to implement the lighting system upgrade.

3. Outline of proposals

3.1 Scope of works

The scope of work is a supply and install contract to upgrade the tunnel lighting system. This will include system testing and commissioning to demonstrate compliance with SPT requirements as defined in the tender documentation. By way of illustration, Figure 1 shows a photograph of the existing lighting within the Glasgow Subway Tunnels and Figure 2 shows an upgraded Tunnel lighting system within London Underground (LED type product with the same performance criteria specified by SPT).

Figure 1 Illustration of existing Tunnel lighting in concrete section
In order to consider the best value solution to SPT, two options were provided within the specification to tenderers:

**Option 1:**
This option was for the full replacement of the existing light fitting with an LED equivalent which would improve the efficiency and reduce maintenance of the existing lighting system.

**Option 2:**
This option is to fit an LED light source within the existing fittings and also improve the efficiency and reduce maintenance of the existing lighting system.

A further option for enhance back up supply was also included within the tender (option 3) but this was put aside at present until the conclusion of the rolling stock and new system tender due to potential restrictions on space with the switch-rooms for the Uninterrupted Power Supply equipment (UPS).

3.2 Tender Assessment Process

Companies were invited to tender in accordance with the specification via Public Contracts Scotland with invitations being issued on 23 June 2015 on the basis of 60% Cost; 40% Quality split and the weightings of the fixed quality criteria were set to allow tenderers to demonstrate their relevant experience; methodology; technical competency and available resources.
On 20 July 2015, seven tenders were returned, covering all options, from the following companies:

- Centregreat Rail
- DVI
- DPS
- Edmiston Brown & Co Ltd
- E& S electrical
- Greystone services
- GD Chalmers

The tenders were assessed by a panel consisting of members of the Subway Engineering Assurance, Infrastructure Manager and Systems Electrical Engineer.

There were a number of clarifications raised with all the suppliers with respect to the performance of the product they were supplying for their installations. The questions were in relation to the provision of evidence that the product would meet the requirements of the SPT performance specification, primarily relating to lux levels. From this process of clarification, four of the companies were unable to provide sufficient evidence to demonstrate that their product would comply with the specification, which led to the detailed assessment of the three remaining tenders as summarised in section 3.3 below.

The tender process concluded that Option 2 the replacement of the internal assembly of the current fittings was considered to be the best value approach for the following reasons.

- There is a capital cost saving of £196K over the equivalent new fitting.
- The existing enclosures remain in a good and robust condition and their asset life is acceptable
- New fittings would involve additional works, such as drilling tunnel lining which has other inherent risks (such as water ingress etc)
- As there will be no dimensional changes to the fittings the kinematic envelope is not affected, whereas with option 1 some proposals would require detailed engineering change assessment to confirm suitability
- There will be no large scale disposal of fittings and hence less waste
- The installation will take less time to install, which has wider benefits due to the amount of work being undertaken within the tunnels

3.3 Tender assessment results

The following table provides a summary of the three tenders for Option 2 following initial submission and a number of detailed clarifications:
DP Services (Scotland) Ltd provided the highest score against the evaluation criteria of 60% for price and 40% for quality, having scored highest on quality and lowest on price. Quality was assessed against the following criteria:

- Demonstration of experience against similar projects
- Technical competency and accreditations
- Methodology and programme

DP Services (Scotland) Ltd have experience of similar installations within underground and confined space environments and they also hold all the relevant technical, safety and environmental qualifications to undertake the work and have provided detailed method statements explaining how the work would be executed. Their quality score was marginally better than Edmiston Brown, who also scored high in these areas and were marginally more expensive. ES Electrical scored lower in the quality areas and highest in price and therefore were placed 3rd.

3.4 Further information

The overall programme for these works is expected to take approximately 6 months (including lead times for materials) and the works will be programmed in alongside other works within the tunnels.

4. Conclusion

The tender assessment process has concluded that DP Services (Scotland) Ltd represents the most economically advantageous tender for option 2.

5. Partnership action

The Partnership is recommended to approve the award of the contract for the tunnel lighting upgrade to DP Services (Scotland) Ltd for the sum of £412,914.

6. Consequences

Policy consequences: This is part of modernising the subway which meets the strategic priority of ‘Revitalising the Subway Network’

Legal consequences: A contract with DP Services (Scotland) Ltd will require to be formally executed.
Financial consequences: The project costs will be split across the 2015/16 and 2016/17 financial years and will be contained within the Energy Efficient Lighting capital project budget. The balance of spend between 2015/16 and 2016/17 will be determined following agreement of the programme of works. Capital investment will result in revenue savings from lower consumption.

Personnel consequences: None identified.

Equalities consequences: None identified.

Risk consequences: Project budget includes contingency to deal with risks.

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