Transport for London
London Underground

Minutes of Meeting

Location: Templar House – Camden Room – 27 March 2013
Subject: TCT Emerging Issues Project Board

Company	Attendee	Role
LUL	Simon Peacock (SP)	HSQE Manager (Asset Performance)
LUL	Martin Skiggs (MS)	Lead Premises Engineer
LUL	John Caves (JC)	Principal Premises Engineer
LUL	Simon Hargreaves (SH)	Asbestos Control Unit (Advisor)
LUL	Guy Harris (GH)	Project Engineer
LUL	Steve Walling (SW)	Senior Project Manager
LUL	Alan Wilson (AW)	Project Manager
LUL	Adrian McCrow (AM)	Senior Sponsor Train Systems & Upgrades
LUL	Iain Flynn (IF)	Lead Sponsor Train Systems & Upgrades

Distribution: Attendees + Dave Simpkins, Paul Hewitt, Peter Syers, Anne Hadjiry

Ref	Minutes	Action
1	This meeting was called to discuss the results of the work into the Emerging Issues resulting from the recent Project Change Note as documented in TCT-CRF004 (attached). AW / GH presented a slideshow (attached) presenting the results of the works agreed in the change note. This was discussed within the group, actions and conclusions are summarised here; • The investigations undertaken under the previous Change Request have concluded. • Both ACMs and heat impose new and previously unrecognised limits on the project, which will impact the project's ability to deliver the benefits. • The Business Case has been revisited and is held to be positive despite the limitations. • The group need to understand the fundamental issues before moving forward. • The requirements need to be re-visited and discussed. They will be tailored towards optimising the remaining business benefits. • It was agreed to minute an action to move to a "development" project. • The board agreed that delivery targets can no longer be the priority and a "problem solving / optimisation" approach should be adopted. • PM specifically asked if this was an instruction to halt delivery under the SK contract or MPU contract. • It was agreed that LU would not issue an instruction to Schorling to halt their delivery. • It was agreed that the MPU was independently valuable and would continue under any circumstances. The meeting is recorded in detail below.	Noted
2	Main findings of investigations into Emerging Issues:	

	ACMs: • It was noted that the assurance given to the TCT project team in the feasibility phase related to the steady state of the railway, which has been tested and verified as safe – i.e. no ACMs release fibres in the day to day operation of the railway. • It was also noted that the remit of the Asbestos Control Unit and Hazardous Materials Unit is to maintain that safe state. • If a project intends to change the steady state, the change is theirs to manage in compliance with the applicable laws and company standards. • This project does not "fit" within those constraints, as there is a risk of knowingly disturbing ACMs but no option to remove them. • This imposes a new constraint on the project which was not foreseen. • Certain types of ACM will prohibit the TCT from cleaning 34% of the LU network which it was planned to operate • Other types of ACM will restrict the cleaning capability of the TCT on 64% of the remaining operational area (currently cleaning air flow rates are limited to below 15m/s) • 2% of the planned operational area can be cleaned without limits imposed by ACMs Dust disturbance: • Testing in the tunnel environment has shown that flows of 22m/s do not achieve any visible cleaning effect. • These flows do disturb some loose dust in the absence of an opposing vacuum flow. • Flows of 60 metres per second do disturb consolidated dust; however two or more passes are required to achieve a level equivalent to "deep clean" by manual methods. Again, this is in the absence of an opposing vacuum flow. • The supplier advised that they would seek to use 80-160metres per second to disturb dust though an incoming vacuum flow. Power requirements: • Modelling of the lowest power mode proposed by the supplier to meet the modified requirements (de-scoped litter) shows that the machine will overheat and shut down within five minutes in tunnel sections. • Mitigations exist, but these will not produce a robust solution even at the lowest power setting. • It will be necessary to reduce the power still further (which the supplier assert is not possible with the current design) and then implement certain mitigations as required.	Noted Noted Noted
3	Points raised in discussion: Business benefits: • When the flow rate and Asbestos prohibited zone information was entered into the project Financial Appraisal Model the following was noted: o Original case BCR: 6:16:1, MB £29.215 o Geographical Limits: BCR 2.55:1 MB £23,777 o Additional loss of deep clean: BCR 2.03:1 MB £23,690 • The effect of additional constraints due to power usage and temperature were not assessed. • It was noted that the "sunk costs" are not relevant to the business	

	case going forward as these cannot be recovered. ACM: • A range of asbestos mitigations would be required to gain best effect from the train. o Encapsulation of noise shelf and caulking o Removal of asbestos troughing o Removal of redundant asbestos woven cable • These deliverables are not part of the TCT scope and will be managed separately. Power and Temperature: • The modelling agreed under the previous Project Change Note has run its course. • The work produced a confirmation of the earlier calculations and an estimation of the scale of changes which may be required. • Mitigations have been modelled and no robust solution appears to exist. • The team needs to work with the supplier to understand; o what can be done to further reduce the power used by the machine o what cleaning will be available at the reduced power level o which, if any, requirements cannot be met o what level of cleaning could be achieved if certain requirements are de-scoped o what the optimal solution is Project Delivery: • It was agreed that certain aspects of the project are in a "development" phase and that not all requirements can be met due to the constraints posed by the environment. • It was noted that the requirements need to be considered again to understand which are essential and which could be lower order requirements. This would steer the project team and supplier towards a solution which optimises the machine's capability to meet the business benefits. • Once this is done, the project team can work with Schorling to understand what can, and what cannot, be delivered. • Downgraded requirements: o It was noted that fire risks are not considered to be a major constituent of the business case. o It is clear that delivery targets can no longer be considered the primary goal of the project team. o The project is effectively back at feasibility.	
4	Actions: • Additional ACM tests o Confirm fibre release on certain ACMs o Establish statistically significant results for all ACMs o Test damaged samples of ACMs	

	• Establish ACM removal / encapsulation plan against costs
	  o Line based
	  o ACM type based
	
	• Note: ACU manages asbestos in “steady state”. Projects are responsible for changes introduced.
	
	• The group were requested to investigate how long airborne dust takes to settle. SH responded that previous investigations indicate two days is typical.
	
	• It was noted that the old TCT was know to stop work mid shift and run in “vacuum only” in order to capture dense clouds of dust it had disturbed.	

5	Strategy going forward:
	
	• A briefing paper for the directors is to be produced, detailing the status of the project and the way forward
	
	• A “sponsor’s instruction” will be issued, confirming the shift into a feasibility project
	
	• The project requirements will be tested and the requirements document will be up-issued to reflect the highest priority requirements.
	
	• Additional asbestos testing will be carried out to validate the existing tests and confirm the flow rates which can be used.
	
	• The project team will aim to achieve the best practical outcome within the requirements / constraints.
	
	• The “negative outcomes” of deleting certain requirements will be formally investigated;
	  o Dust on station platforms
	  o Impact of dust clouds on service
	  o Impact on rolling stock and signalling assets
	
	• IF suggested the following sources of anecdotal information regarding the above;
	  o Jill Collis
	  o Mike Strzelecki
	  o George Clarke
	  o Bob Benn
	  o Sharon Duffy
	  o Andy Jinks
	  o Tony Garland	

6	AOB – none	