

Summary Report on MUDFA Audit.

Date: 14th August 2008

Audit Team: J. McEwan, J Ritchie, A Dickinson, P Dobbin, A Scott

Report Author: J McEwan

Executive Summary

Findings

The results of the Audit undertaken reveal s **a generally satisfactory position but with significant exceptions**, these exceptions are detailed in the Major Findings shown against each location and on the review of the MUDFA initiating structure. The process surrounding design drawings, updating of same, tracking and incorporation of technical queries (TQS), redlining of drawings and competency/training records was found to be satisfactory across all the locations reviewed.

The major findings have a common thread in the lack of appropriate documentation, in particular within the Inspection and Test plans where documenting of reinstatement plans has been uniformly absent.

Within the context of the brief review permitted in the timescales, the initiating structure was found to be inconsistent and unsatisfactory. There appears to be no clear calendar of project meetings, communication and technical review meetings. Attendance and recording at those meetings held is inconsistent and the Carillion/Tie engagement is adversarial and ineffective, with the Programme Management by Carillion in particular appearing low key and detached.

Recommendations

- 1. It is recommended that Carillion are formally notified of the deficiencies discovered in this audit with especial focus on the lack of appropriate reinstatement documentation and asked to provide appropriate and evidenced assurance that all works carried out to date are consistent with the specified requirements across all locations.**
 - 2. The lack of initiating structure is felt to be at the core of the deficiencies and inconsistencies found across the area and a review and refresh of the management structure and its composition is recommended to establish the appropriate rigour in this area.**
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1 Audit Scope

An Audit notice (see Appendix 1) was issued to the MUDFA programme advising of the intent to carry out an Audit on 12th/13th August 2008.

Carillion: Quality procedures Inspection, Test, Plans.(ITP)	Carillion Nominated persons.	Start 10.00hrs 12 th August 2008 End 15.00hrs 13 th August 2008
Scope of Audit:		Location:
<ol style="list-style-type: none"> 1) Design drawings 2) Audit trail to show why and how changes have been made and approved, including any TQ's raised and resolved 3) Test certificates/schedules in place for utilities and for re-instatements 4) What trend information is produced and how is this actioned 5) Do final "red line" drawings reflect the trail from design through to implementation 6) Project Procedure: MUDFA Work site Completion Certificates. 7) Competency and Training records <p>This Audit will be carried out over the 2 day period from 10.00 to 15.00 12th/13th August 2008.</p> <p>Delivered by end of business Friday 8th August 2008.</p>		<p>MUDFA office and site location</p> <ol style="list-style-type: none"> 1. BT Chamber MRX 610B Diversion 1B/BT/D/511 Leith Walk Mouth of Jane Street. 2. SW Twin 500 Crossing Diversion 1B/BT/D/302 Foot of the Walk. 3. SGN Gas Main Diversion 1d/ Shandwick Place 4. SP Diversion 1B/SP/D/01 Crossing Leith Walk at Crown Place. 5. Thus Surface Box Diversion 1B/TH/D/03 Leith Walk Corner of Jane Street.

A number of commonal facets (Items 1 through 7) had been identified for review across 5 different locations.

2 Audit Method

A team of experienced Programme, Project and HSQE staff was appointed to carry out the review comprising:

Jim McEwan	Tie Executive
Jim Ritchie	HSQE advisor
Andrew Scott	Project Manager
Phil Dobbin	Project Manager

Draft for review

Alisdair Dickinson Asst Project Manager

The 5 Location Areas identified for review were allocated to each of the Audit team as undernoted:-

1. BT Chamber MRX 610B Diversion 1B/BT/D/511 Leith Walk Mouth of Jane Street.
A Dickinson
2. SW Twin 500 Crossing Diversion 1B/BT/D/302 Foot of the Walk.
Andrew Scott
3. SGN Gas Main Diversion 1d/ Shandwick Place
Phil Dobbin
4. SP Diversion 1B/SP/D/01 Crossing Leith Walk at Crown Place.
Jim Ritchie
5. Thus Surface Box Diversion 1B/TH/D/03 Leith Walk Corner of Jane Street.
A Dickinson

In addition to the review of the scoped items at the locations identified, a brief and summary review of the initiating structure and control process with focus on the interaction between Carillion and TIE was undertaken.

3 Audit Findings

3. 1 Location 1 BT Chamber

Major Finding : Incomplete and deficient Inspection and Test Plan and associated documentation

Reference ITP for worksite 1BWSI001/002

Reference BT Specification LN 550

Failure of ITP to reference the construction of BT Manholes and Chambers. In particular, no reference is made to the following:

- A – Concrete testing requirements such as slump and cubes
- B – Backfill requirements
- C – Pre/Post concrete inspections
- D – Formation checks

The following information was not recorded or available for review.

1. Formation prior to constructing chamber.
2. On site concrete slump tests.
3. Pour records providing traceability of where a batch of concrete was poured, correlation between batches and concrete cubes taken and construction joint locations.
4. Confirmation that steel has been installed and fixed as per drawings CN14946.
5. Confirmation that steel has 40mm cover as per note 3 on drawing CN14946 Sheet 1.

Draft for review

6. Concrete cube results.
7. Backfilling records.

Corrective Action

Carillion to provide/demonstrate the following:

1. BT chamber has 40mm cover as per note 3 on drawing CN14946 Sheet 1.
2. Steel has been installed as per drawings CN14946.
3. Concrete cube results and sample locations.
4. Backfill was completed as per specification LN 550 requirements.

Summary for Location 1 BT Chamber: The audit demonstrated poor recording of the construction process. It is clear from the certification provided by CUS that the operatives and supervisors are suitably qualified to carry out the works however no records exist to confirm any of the onsite visual inspections which CUS state have been carried out. It is therefore not possible to demonstrate compliance with the specification other than via word of mouth. The construction of the BT chamber was carried out under an advanced RAT work order proposal. There is however no record of a Work Order Confirmation Notice. It was also noted that although the access permit for the work site was valid during the BT chamber works, it had since expired and not renewed even as works were still continuing on site. There was a solid trail of design changes via TQ and letters issued to CUS from tie. It was felt by the auditor however that reference to these TQ's and letters should be highlighted on the red line drawings to simplify the audit trail.

3.2 Location 2: SW Twin 500 Crossing Diversion 1B/BT/D/302 Foot of the Walk.

Major Finding Deficient inspection records :

No recorded inspection of bed and surround and foam concrete placement and testing.

Major Finding Deficient ITP:

ITP does not include recording or checking procedures for reinstatement.

Minor Finding:

ITP identifies requirement for joint report records. No records available for Butt Fusion Welding.

Corrective Action

Carillion to carry out such testing as directed by TIE which will confirm that the bed, surround and foam concrete placement and required testing meets the specification required and also that the ITP's are amended to assure inclusion of requisite reinstatement testing and records associated.

Summary for Location 2 SW Twin : The Audit has been classified as a C class audit, **generally satisfactory with significant exceptions** with 2 major audit findings. The findings confirm a systematic problem with ITP preparation and site inspection recordings.

3.3 Location 3: SGN Gas Main Diversion 1d/ Shandwick Place

Major Finding : Deficient ITP

Only delivery tickets for the foam concrete utilised in the backfill were available and the records produced for the tar reinstatement were only suitable for measurement purposes. No inspection and testing was carried out on the backfill materials and no requirement existed at the time the works were carried out to do so.

Minor Finding: Communication of agreed new position.

The audit showed the installation was not carried out to the IFC drawings issued; this was due in part to physical constraints existing in the roadway and an opportunity for value engineering realised by the delivery team. The site team observed an opportunity to utilise an adjacent service track to divert the main and issued a TQ to SGN to facilitate the change.

Although the new position of the main was supported by a TQ and the final position has been correctly recorded in the Redline drawings no trace of the agreed new position being communicated from MUDFA to CUS could be established.

Corrective Action:

Carillion to carry out such testing as directed by TIE which will confirm that the bed, surround and foam concrete placement and required testing meets the specification required and also that the ITP's are amended to assure inclusion of requisite reinstatement testing and records associated.

Summary for Location 3: SGN Gas Main Diversion 1d/Shandwick Place

This section of the audit reviewed the installation of a gas diversion in the Shandwick Place area of the works. The staff at Carillion were friendly, open, supportive and cooperative throughout the audit process..

Test certification supporting the operatives competency, the joints in the pipe work and the final pressure testing of the pipe were available and in order.

I have classified my section of the audit process with a finding of Class C, generally satisfactory with a major exception

3.4 Location 4: SP Diversion 1B/SP/D/01 Crossing Leith Walk at Crown Place

Major finding deficient ITP :

tie HSQE carried out a previous audit based on Carillion ITP's this audit was closed out on the 29th of July 2008. Carillion Stated that they had generated and issued Utility Installation Record Sheets form MU/MUDFA/Form 088-091 to all delivery Managers and Front Line Managers and instructed that the form should be completed and tie shall be invited to witness completions. This does not appear to be communicated.

Major finding Access Permit:

Carillion did not appear to have a current Access permit for works within this specified area.

Major finding Works Order confirmation

Carillion letter Ref: AMIS/tie/letter/ERA/Project/693, request for Works Order Confirmation, however tie could not demonstrate that this request was met.

Corrective Action:

Carillion to demonstrate that they have amended ITP accordingly to include appropriate reinstatement and to provide assurance on works already completed. Major findings on access permits and work order confirmation have already been closed.

Summary for Location 4: SP Diversion 1B/SP/D/01 Crossing Leith Walk at Crown Place

The audit revealed 3 major findings as detailed, and for that reason is classified as generally satisfactory with significant exceptions. Two of the major findings have been remediated and closed immediately.

Carillion were able to demonstrate a good tracking system for design drawings and changes through signed CVI, s.

Carillion are marking up and recording redline Drawings appropriately.

Carillion has demonstrated that throughout this Audit Carillion HSQ&E have a robust training Matrix MU/MUDFA/007. This is reflected within the competency check for this work location.

3.5 Location 5: Thus Surface Box Diversion 1B/TH/D/03 Leith Walk Corner of Jane Street

Major Finding : Incomplete and deficient Inspection and Test Plan and associated documentation

Failure of ITP to reference the construction of BT Manholes and Chambers. In particular, no reference is made to the following:

A – Concrete testing requirements such as slump and cubes

B – Backfill requirements

C – Pre/Post concrete inspections

D – Formation checks

Corrective Action Carillion to provide/demonstrate the following: Steel has been installed as per drawings CN14946. Concrete cube results and sample locations. Backfill was completed as per specification LN 550 requirements.

Summary for Location 5 : Thus Surface Box Diversion 1B/TH/D/03 Leith Walk Corner of Jane Street

The summary position is generally as noted in findings for Location 1. The positive aspects of consistent design and TQ tracking were present and the records for reinstatement and the ITP in general were deficient.

3.6 Management Control and Initiating Structure

Interviews with Senior staff within both Carillion and Tie were carried out to review in summary form the initiating structure employed to monitor progress and assure the appropriate level of co-ordination, communication and issue resolution.

Major Finding: Command And Control rigour

Meetings for project progress are held on an irregular basis and there appears to be an absence of formalised minutes/action taking and tracking.

Technical meetings are convened at an operational level and while Technical Query resolution has been found to be generally satisfactory, there is no formalised meetings to track, prioritise and co-ordinate resources deployed in this at a strategic level. A meeting for this had been established and had stopped without apparent authority, it is intended to re-establish this.

A formal communication/stakeholder meeting had been established and was operating up until 3 weeks ago but had not been held since and the respective participants were unclear as to when it would next be held.

In carrying out the interviews with Carillion management there was a surprising level of disengagement and lack of awareness on the issues and process required for the programme.

In the absence of a formalised schedule of meetings, the absence of obligation to attend, appropriate and consistent note taking and related action tracking, it is considered that the management control regime and associated initiating structure requires urgent review.

Major Finding: Audit Tracking.

Audits on the respective programme processes are carried out on but it is not clear that there is an overarching audit plan, nor is there a process in place to monitor and track conclusion of remedial action on the related audit findings.

Major Finding: Communication and teamwork.

Feedback from the staff interviewed reflected an adversarial climate and tone between TIE and Carillion, the Carillion staff in particular felt that they were under a stream of constant criticism and that the tie management style was confrontational.

Corrective action

The Management Control and initiating structure framework requires urgent review.

The process for Audit tracking requires to be established and reported on under the auspices of an overarching Audit plan.

The collaboration and teamwork ethic between tie and Carillion requires urgent consideration .

Summary on Management Control and Initiating structure. The focus on delivery and determination on achieving deadlines is evident in a number of the personnel interviewed and there is much good work being undertaken on that basis in this demanding programme. There are however a number of weaknesses in the processes surrounding organisation control and tracking of meetings with associated reporting and these require to be resolved to assure greater rigour. The relationship between tie and Carillion staff appears adversarial and confrontational in style and this requires urgent attention and will in all probability require some action to refresh the teams.

A scheduled Audit is due to be carried out within your department/ organisation on the proposed date identified below, please ensure that all personnel are aware of the fact and ensure that full cooperation is supplied to the identified auditors during the audit.

Part 1 – To be completed by Lead/ Auditor

1) DETAILS OF PROPOSED AUDIT			
Organisation/System to be Audited		Auditee:	Date of Audit:
Carillion: Quality procedures Inspection, Test, Plans.(ITP)		Carillion Nominated persons.	Start 10.00hrs 12 th August 2008 End 15.00hrs 13 th August 2008
Scope of Audit:		Location:	
1 Design drawings 2 Audit trail to show why and how changes have been made and approved, including any TQ's raised and resolved 3 Test certificates/schedules in place for utilities and for re-instatements 4 What trend information is produced and how is this actioned 5 Do final "red line" drawings reflect the trail from design through to implementation 6 Project Procedure: MUDFA Work site Completion Certificates. 7 Competency and Training records		MUDFA office and site location 1 BT Chamber MRX 610B Diversion 1B/BT/D/511 Leith Walk Mouth of Jane Street. 2 SW Twin 500 Crossing Diversion 1B/BT/D/302 Foot of the Walk. 3 SGN Gas Main Diversion 1d/ Shandwick Place 4 SP Diversion 1B/SP/D/01 Crossing Leith Walk at Crown Place. 5 Thus Surface Box Diversion 1B/TH/D/03 Leith Walk Corner of Jane Street.	
		Participants:	
		tie Limited: Jim McEwan. Lead Auditor Support Auditor: Andy Scott, Phil Dobbin, Alisdair Dickenson, Jim Ritchie Carillion: Dave Smith to provide nominated auditee/s	
Reference Documents/ Standards			
MU/MUDFA Form 005 (ITP), BS EN 150 9001:2000 DEL. MUDFA 7832 re: Work site Completion Certificates.			
Lead/ Auditor			
Name: (PRINT)	Signature	Date	Copy to

Jim McEwan			Willie Gallagher Graeme Barclay Tom Condie, Gary Harsant. Susan Clark. Bob Bell Frank McFadden.
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