
From: Ralf Honeck [ralf.honeck@bilfinger.de]
Sent: 28 March 2008 13:50
To: Tony Glazebrook
Cc: etn-dms.civil@primas.bilfinger.de; Daniel Goedecke; Scott McFadzen; Bernd Kasueschke; kraemer.robert@siemens.com; roland.brueckmann@siemens.com
Subject: Antwort: RE: ETN, Design Construction Meeting on 02 April 08
Attachments: pic00041.jpg

Tony,

we have prepared for our meeting on 2 April. A guideline how to split the geographical packages to small packages you will find below. This could be used as a base for the meeting.

We confirm again that BBS will not start construction without having a design approved by relevant authorities and issued for construction. Our response on your question <how will BBS construct where design has not yet been design-assured by SDS?> as you used it for the agenda main topic would be <Not at all>. We are targetting to accelerate the process of getting design issued for construction. The situation as experienced for Package 1B that got 4 month delayed within the last 4 month is not desirable.

We strongly recommend the participation of tie's project management e.g. Steven Bell in this meeting. Our Scott McFadzen would join, too. We need to determine the next steps but also need to get them agreed.

This is our guideline for the process of splitting the 13 geographical packages for Phase 1a and 1b into smaller packages and to get them issued for construction:

1) The purpose of the package split is to allow construction start of certain construction elements without having a completely approved design for a whole geographical section. The 'Issue for Construction' (IFC) date of a defined package shall meet the the 'Construction Start' date of the related site activity considering a lead time between IFC and construction start for work planning and procurement.

2) In principle the packages shall be as large as possible. If a package split deems to be reasonable then the package split, the content of the packages and the order of submission must allow approving the design of a package independent from following packages. It might be that information usually expected to be in a later package needs to be included in an earlier package just for the purpose of getting approval. Reference can be made only to design issued with an earlier package.

3) Package splits can be 'vertical' or 'horizontal'. Vertical means a geographical section split e.g. by chainage or by structure and horizontal means a split in accordance with the order of works to complete a geographical section.

4) The split of the geographical packages bears a higher risk that interfaces of the design are not properly considered. Maybe when doing the detail design of an earlier package some interfaces with the design of a later package have not been foreseen. In order to identify these risks tie, SDS, BBS, CEC, Transdev and other 3rd parties need to be consulted.

A risk allocation among tie, SDS and BBS needs to be agreed. A cost evaluation for the risk allocation has to follow.

5) Practically the split of packages is driven by the requirements of the construction programme for approved design. On the other hand SDS can propose design packages which can be brought quickly or at least earlier than currently scheduled to a level of being 'Issued for Construction' allowing BBS to commence works.

Currently the BBS construction programme follows the design programme. It would be subjected to changes in accordance with SDS' proposed packages if BBS finds it advantageous.

The BBS construction programme is very complex but BBS/Steve Sharp identified some principle priorities for the issue of design:

- a) Earthworks: Depot excavation shall start early. The material shall be used for the S23 Carrick Knowe Bridge approaches and Section 7.
- b) Track: Track works shall start at Edinburgh Park towards South Gyle and at the Depot towards Gogarburn.
- c) Bridges: S19 Haymarket Viaduct, S20 Russel Road Bridge and S29 Gogarburn Bridge shall start early. S21A Roseburn Viaduct, S21E Water of Leith, S22 Balgreen Road and S32 Depot Access Bridge are later in the programme.
- d) Retaining Walls and Culverts: W8, S21B and S21D shall start early as well as S21C. This is to construct the bankseats for S21A and S21E.
- e) Roads: Section 1A shall start early.

6) The packages' content and what can be constructed when they are issued for construction could be: Survey Plans, Geological Reports, Alignment, Site Clearance, Site Constraints, Environmental, Ecological, Archaeological, etc. - Reports, Traffic Management, Utility Works, Pre-Earthworks Drainage, Ducting, Geotechnical Design, Earthworks Design, Drainage, Road Works, Pavement, Road Markings, Traffic Signs, Track Formation, Track Works, Retaining Walls, Bridges, Culverts, Mast Foundations (OLE, Lighting), Tramstops, Substations, OLE, Lighting, Signalling and Communication, E+M, Accommodation Works, Landscaping etc..

The design packages could be developed from the element design packages, but the element design packages as they are currently defined are not suitable. They sometimes need to be bundled with other packages e.g.

earthworks and ducting or sometimes there content is not complete for approval without having later packages issued. Damian Sharpe's 'Design split' could be used to define the package content more precisely.

7) BBS (Siemens) shall deliver design. It needs to be considered that Siemens will not start design without having an agreement signed. The design will follow a kind of 'top-down' methodology e.g. mast foundations or embankment ducting need to have the required cables determined. This is opposite to the construction programme which starts with foundations and ducting.

There are two possibilities to provide this design. The more beneficial has to be found and agreed:

a) The design could be provided as a part of a SDS package. The SDS design programme depends then on the delivery of Siemens design. Delivery dates need to be agreed.

b) The design could be provided in design packages getting approvals independently. In this case the Siemens design needs to be issued to SDS, too. SDS needs to review it for adverse effects on the SDS design. Some interface items might require amendments of the SDS design.

8) The SDS checking procedure with 'Interdisciplinary Design Checks' sessions has to be replaced by permanent interdisciplinary checking (as it is usual for designers) and the 'Design Assurance Statement' can be kept only as an overall certificate since an earlier SDS' certification is required to allow the design to be IFC. Review periods and approval workflow need to be defined and agreed to allow planning. BBS requires review periods. A consultation and approval matrix needs to be defined.

9) The issue of re-design could be triggered by e.g by tie, CEC or 3rd parties (extra requirements), SDS (design deficiencies) or BBS (amendments for construction purposes). The responsibilities for cost and delay need to be agreed.

10) Generally BBS will not start construction or any procurement without approved design being IFC. Still there could be packages where tie and BBS agree a special approval procedure e.g. as for site clearance under the advanced works contract.

Regards,

Ralf

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Tony Glazebrook
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26.03.2008 16:03

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RE: ETN, Design Construction Meeting on 02 April 08

Daniel,

By mutual agreement with the organisations concerned, the attendees will be:

Tony Glazebrook (chair) - tie
Gavin Murray - tie
Lindsay Murphy - tie
Tom Hickman - tie
Andy Conway - CEC
Sinead Scott - Transdev

Alan Dolan - SDS (plus relevant Section Design Manager or Design Team Leader, as required during the meeting) Roland Brückmann - Siemens Daniel Goedecke - Bilfinger Berger

The agenda comprises just one item, which is:

- Jointly to agree the answer to the question: how will BBS construct where design has not yet been design-assured by SDS?

Best regards,

Tony Glazebrook
Engineering Services Director

From: Daniel Goedecke [mailto:Daniel.Goedecke@bilfinger.de]
Sent: 26 March 2008 12:59
To: Tony Glazebrook
Cc: Ralf Honeck; kraemer.robert@siemens.com
Subject: ETN, Design Construction Meeting on 02 April 08

Tony,

Can you please forward a detailed agenda for the above mentioned meeting?

Regards

Daniel

Daniel Goedecke

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