NEW EQUIPMENT & SYSTEM APPROVAL PROFORMA

Ref: 13/18477

Note: the prompts given below are only a guide to the information required for approval. Dependent on the type of equipment or system that requires approval delete any section that is not applicable or include additional information if necessary. Mandatory fields are marked with an asterisk (*).

1 **Equipment or System to be approved** *

Vossloh Cogifer Australia AS50 kg, 1in 8, Dual Gauge Turnouts Type 32 & 36 on Concrete bearers – System wide across ARTC.

2 **Originator** *

Name: Glenn Lorenz Company: Vossloh Cogifer Australia (VCA)

3 **Introduction** *

The 50kg Dual Gauge turnouts on concrete bearers are a derivative of the 47kg Dual Gauge turnouts on timber bearers developed for South Australian Railways in the 1970's and in Victoria for over ten years, and have been Type Approved previously. The initial 50kg DG turnout designs were instigated by the Department of Infrastructure, Victoria (DOI). In 2002, these designs were Type Approved by DOI. Subsequently ARTC Type Approved improvements to these designs in 2006, and they were given approval for use in new installations and as replacements for existing 47kg Dual Gauge turnouts.

VCA have manufactured all fourteen of the 50kg Dual Gauge turnouts installed on the ARTC network in Victoria and South Australia since 2006. These have performed well.

Geometry of the 50kg Dual Gauge turnout Type 32 & 36 is shown on VCA General Layout Drawings A0B16724 and A0B16725.

4 **Determination of Need** *

Regional Rail Link in Victoria (RRL) require these DG turnouts to be approved promptly for use in the North Melbourne Flyover to South Dynon track alterations. The Type 36 Turnout is for the DG Main Line connection to SG Main Line and DG turnout to Freight Link Track. The Type 32 Turnout separates the DG Freight Link Track Normal to BG access to the V/Line South Hump Avoiding Track (connection to the V/Line Network). **Both turnouts will be included in ARTC Lease and maintained by ARTC.** 2 VicTrack Flyover drawings: SSS–C0774B & SSS-C0777B.

ARTC, MTM, V/Line and VCA all agree that there should be common designs for DG turnouts right across Victoria and South Australia. This will optimise manufacture, maintenance and inventory management for all.

5 **Significant Change or Not**

This change in equipment or system is assessed as **Minor** as VCA are a proven supplier and these designs are based on very similar designs, the only difference being the use of 50 kg/m rail in place of 47 kg/m rail.

6 **Review Panel** *

- John Furness - Manager Standards
- Patrick Gray, RRL Consulting Engineer
- Jamie Threader, Delivery Manager, Melbourne to Crystal Brook
- Mick Stoneham, Signal Manager East/West
- David Ogucha, Track and Civil Standards Engineer

7 **Safety**

These 50 kg/m designs are based on previously proven designs for the slightly smaller 47 kg/m rail. So safety will be to a comparable level. They will be slightly stronger and more robust than for 47 kg/m rail.

8 **Performance and Suitability**

These 50kg/m 1 in 8 designs have similar geometric footprints, component designs and use the same M23A switch machine and U5A detector for operation as the 47 kg/m designs. Hence, they are compatible with current operations, signal and power supply systems.
These designs comply with ARTC and International standards. Turnout radii and lengths are the same as existing 47 kg/m turnouts. They are stronger and more robust than the 47 kg/m designs.
They are designed to at least meet current speeds of 70 km/h for the straight and 35 km/h for diverging traffic on SG (25km/h on BG).

(i) **Use in other rail networks**

DG turnouts are not common across the world.

(ii) **Use in the ARTC network**

ARTC has already installed 14 No. DG 50 kg/m, 1 in 8, DG and 7 No. Gauge Separators in the ARTC network in SA and Vic. These have performed well.

(iii) **Issues arising from usage of the equipment / system**

As these designs are more robust than the 47kg/m equivalents, maintenance will be reduced. Turnouts components can be readily replaced in the field and spares promptly supplied from VCA workshop at Castlemaine in Victoria.

(iv)	**Changes required to infrastructure or systems for use of the equipment** These 50kg/m 1 in 8 designs have similar geometric footprints, component designs and use the same M23A switch machine and U5A detector for operation as the 47 kg/m designs. Hence, they are compatible with current operations, signal and power supply systems. For these types of turnouts, signalling design dictates that BG and SG trains are detected separately so that train movements are compatible with the configuration of the turnout installed.
9	**Reliability** This design is more robust than current 47kg/m designs so they will be more reliable. VCA is a proven supplier (Previously they were TKL) and their products are manufactured to a high quality. Their after sales service is also excellent.
10	**Maintainability** See comments under 8 above. These turnouts will be compatible with current designs. VCA will supply maintenance manuals and spare parts.
11	**Approval** * VCA AS50 kg/m rail, 1 in 8, Dual Gauge Turnouts Type 32 and 36 are approved for use on the ARTC network on concrete bearers. Detailed in drawings A0B16724 and A0B16725.
12	**Conditions of Approval** * • Only to be used at sites where track layout is appropriate. • Maintenance to be undertaken in accordance with ARTC Manual ETN-03-01. • Manufacturers to supply appropriate spare parts. • ARTC to be supplied with any updated design drawings from VCA. • Maintainers to have appropriate TMPs for these new designs.

13	**Does the Originator accept the additional Conditions of Approval as set by the Review Panel:**	Yes ☑		☐ No		☐ N/A

14	**Sign off**			***ARTC office use only***
	Review Panel:			
	John Furness	On File	Date:	18/10/2013
	Patrick Gray	On File	Date:	26/09/2013
	Jamie Threader	On File	Date:	26/09/2013
	Mick Stoneham	On File	Date:	24/10/2013
	David Ogucha	On File	Date:	18/10/2013