

Government of India (Bharat Sarkar)
Ministry of Railways (Rail Mantralaya)
Rail Bhawan

No.2000/Tele/TC/3

Dated: 16th October 2003

General Manager (S&T), All Indian Railways,
General Manager (S&T) (Const), All Indian Railways,
General Manager (S&T), CORE, Allahabad.

**Sub: Testing of Fibres and procurement of instrumentation for
maintenance of OFC based communication systems**

Railways have been providing optical fibre based communication systems since late 80s and these systems have so far been used on 1310 nm wave length, considering the Railways' requirements mostly for short haul communication and there too for limited number of voice channels. Due to this, fibres were being tested only at 1310 nm and the instrumentation (OTDR, power source and power meter etc) was procured which were suitable for testing at 1310 nm only. Further, due to adequate power budget margins being available in the system, proper care was not being taken to see that splice losses are kept at minimum possible and overall losses are well within the stipulated limits.

2. Now, OFC assets of Indian Railways are being transferred to RailTel Corporation of India Ltd., who will be using these assets for commercial exploitation and providing broadband system on the exiting fibres. Initially, RailTel are planning to provide STM-16 (2.5 gbps) system on 22,000 Kms and then they may have to upgrade the links connecting metro cities by DWDM system. This will require the system to operate on 1550 nm and to ensure minimum number of regenerators in the link, the splice losses should be as low as possible. The present limit of fibre attenuation at 1550 nm of 0.25 db/km is, therefore, required to be maintained and splice loss is to be ensured to be not more than 0.05 db/km, meaning thereby that total attenuation in the cable fibre has to be within 0.3 db/km (at 1550 nm.)

3. Following 'Action Plan' is, therefore, required to be set up and implemented:

- (i) All testing equipments should be suitable for parameter measurements on both 1310 nm as well as 1550 nm,
- (ii) Railways should carry out fibre testing for ALL FIBRES at both 1310 nm as well as 1550 nm.
- (iii) In all existing OFC tenders being executed by Railways, testing should be carried out at 1550 nm also, before the system is accepted as commissioned. Where acceptance letter has already been issued and the cable is under maintenance period, testing of fibres may be done at 1550 nm and all deficiencies noticed attended.

- (iv) Future OFC tenders should have provision for fibres being suitable for communication at 1310 nm as well as 1550 nm.
- (v) Needless to reiterate, instrumentation procured will have to be as per standard specification, issued either by RDSO or TEC.

4. Immediate action in this regard is requested under advice to this office.

o/c *R. C. Sharma* 16.10.03
(R. C. Sharma)
Addl. Member (Tele)

Copy to:

- (i) DG (Telecom), RDSO, Lucknow.
- (ii) CSTE, DMRC, New Delhi.
- (iii) CSTE, KRCL, Mumbai.
- (iv) Director, IRISSET, Secunderabad.
- (v) MD, BSNL, New Delhi.

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Signature
दिनांक
Date
16.10.03

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