



Picture 1: Officials on a visit to the test tunnel site.

Spain

New R&D Centre for Fire and Ventilation in Tunnels

A test tunnel will be built in San Pedro de Anes (Asturias) to study fire and ventilation in tunnels. The tunnel will be used to undertake life-size drills in emergency situation and to test the response of ventilation and safety equipment. A 540 m tunnel will be built, extending the existing 167 m-long Conixu tunnel built in 1847-1849. This tunnel belongs to FEVE, the narrow gauge railway company. There will also be two high temperature fan test stations and an office building in the old San Pedro de Anes station.

The project is promoted by Foundation Barredo, an organization specialized in R&D, health, safety and training to the mining industry and underground engineering sector. With this test tunnel, Spain will pioneer research in risk prevention in tunnels. It is also planned to rent the future facility to companies who wish to do tests. A €12 million investment is necessary. The tunnel is scheduled to be ready within one year. Visit www.fund-barredo.es

Spain

Madrid-Lleida Section of High Speed Link to Barcelona Plagued with Substantial Defects



Picture 2: The La Riba (Alt Camp) tunnel and viaduct.

The Madrid-Lleida section of the high speed railway to Barcelona is plagued with numerous defects discovered during the promotional trips which started late February. The soil collapsed under the tracks near Saragossa opening a 4 m-deep x 3 m-diameter hole, the signalling system is inoperative, and failures of the catenaries have also been reported. The promotional trips have been suspended and the opening of the line, programmed for April, will be delayed. Sources of the railway sector questioned the ministry of

development's policy to always prefer time frames to work quality and to award contracts to the companies proposing the shortest lead times, even though they had no or little experience in the business. National rail company RENFE – despite its strong experience in the matter since the construction of the Madrid-Sevilla high speed line – was not involved in the project and a new body – GIF – was established to manage the construction. Unstable ground has obliged to stop the construction of one of the two twin tunnels under the Torre del Petrol mountain between Alt Camp (La Riba) and Conca de Barberà near Tarragona on the Lleida-Barcelona section. The invert is cambering in some places of the 2 km tunnel. The Ministry of development has commissioned a study to Prof. César Sagaseta, who teaches geotechnics at the Santander Civil Engineering School, and Eduardo Alonso, who teaches ground engineering at the Polytechnic University of Catalonia in Barcelona. The tunnel is now holed through and has been excavated in clayish ground by FCC and Comsa. The design was made by Inocsa. Workers also reported heaving in the Lilla tunnel between Riba and Montblanc. Visit

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World Digest of Tunnels Under Planning

Australia. Brisbane Lord Mayor Jim Soorley has unveiled a blueprint for a A\$900 million toll tunnel beneath Brisbane, that would divert 50,000 vehicles a day from Brisbane's central business district. The project has still to win vital state government approval. The route of the proposed tunnel follows Ipswich Road, passes beneath the Story Bridge and Fortitude Valley and exits just east of the Exhibition Ground where it would connect to the Inner City Bypass. The twin 12 m-wide tunnels, up to 60 m underground, would be drilled using TBMs through Brisbane's notoriously hard rock. Read E-News Weekly 30/2002.

Italy. Instead of a viaduct, a tunnel of about 1 km will be built on the Modena-Reggio Emilia section of the Milan-Bologna high speed line to cross river Secchia and the Brenner motorway. The tunnel solution has been preferred to mitigate the environmental impact on a XVIIIth century Vandelli-Dallari villa.

United Kingdom. The Welsh Assembly is considering a multi-million pound road tunnel project for the A55 on the headland coast road at Penmaenbach. A study has now been commissioned following a letter from Welsh environment minister Sue Essex to Conwy AM Gareth Jones, expressing her interest in such a scheme. The work, unofficially estimated at over £15 million, would provide a second tunnel on the major road network as well as other improvements to help traffic congestion. Read E-News Weekly 6/2002.

United States. Colorado considers building a high-altitude reservoir project to tackle the region's drought problems. The concept is a 900,000 acre-foot reservoir (1.11 billion cubic metres or 38.2 billion cubic feet) that would feed its water through a tunnel under Cottonwood Pass into the South Platte basin. It was considered by Arapahoe County in the mid-1980s.

World Digest of Bids

Chile. As expected, the Ministry of public works has put off to 7th May the opening of the technical offers and the remittance of the economic offers and to 4th June the opening of the economic offers. Visit www.moptt.cl. Read E-News Weekly 10/2003.

France. Open call for bids, deadline 26th March, 2003 for tunnel operation services in six tunnels in Hauts-de-Seine county, among which the future A86 motorway tunnel. Visit <http://ted.publications.eu.int/udl?request=Seek-Deliver&language=en&docid=038217-2003>, OJ S 44, or contact DDE des Hauts-de-Seine, Nanterre, fax +33 140972900. Read E-News Weekly 1/2003.

Portugal. The Madeira government has decided to put out to tender the construction of the second phase of the Vila da Calheta bypass. The project will require to build a 1,220 m tunnel. The first phase is under construction, requiring two tunnels (940 and 320 m). As of 24th February, there was only 45 metres to go to break through one of them. Read E-News Weekly 30/2002.

Romania. Restricted procedure, deadline 7th April, 2003 for supervision and rehabilitation of the Drobeta Turnu Severin-Lugoj section on national road No. 6, including a 800 m tunnel to be built in the Plugova area. Work to start in August 2003. Visit <http://ted.publications.eu.int/udl?request=Seek-Deliver&language=en&docid=038385-2003>, OJ S 45, or contact Mrs Eugenia Dunca, Deputy General & SAO, National Administration of Roads, 38 Dinicu Golescu Blvd., 8th floor, room 22, sector 1, Bucharest 77113.

World Digest of Contract Awards

Sweden. NCC has been commissioned by Vägverket, the national road administration, to construct a section of highway 48 between Borgunda and Skovde. This turnkey contract is worth SKr245 million. The section to be built will comprise a 2.4 km dual two-lane highway located in Skultorp. The project includes an approximately 700 m cut-and-cover tunnel under the P4 Regiment's exercise field. Construction of the tunnel will be technologically complex, since very high groundwater pressure will complicate foundation engineering work. Work will commence in March and extend over two and a half years. Visit www.ncc.info

World Digest of Ongoing Tunnelling

Italy. A 9-page confidential report written by Satti reviews, for each worksite of metro line 1 in Turin, the work advance, the problems encountered, the delays and the amounts of money claimed by the contractors. The JVs commissioned to build lots 3 and 4 (5,150 m of tunnel and 10 stations) say they have lost substantial amounts of money and they threaten to slow down or halt work. For each contract, the present status is as follows:

- Lot 1, €12.2 million, Collegno depot and centralized control room: the job is behind schedule, €2.7 million of work has been done to date but €5 more million are claimed by the companies. They have received €500,000.
- Lot 2, €9.9 million, cut-and-cover tunnel to Fermi: the contract is within schedule. In September 2002, €5.6 million of work was already completed but claims for a total of €5.5 million had been received. Completion is planned for May 2003.
- Lot 3, €44.2 million, 2.8 km of TBM-driven tunnel and five stations (Fermi, Paradiso, Marche, Massaua and Pozzo Strada): the work done so far is worth €13.8 million but contractors litigate for another €5.3 million. However, Satti estimates the demand "unfounded and unacceptable". Work advance for the stations is satisfactory while the tunnel is 8 to 9 months behind schedule.
- Lot 4, €37.8 million, 2,350 m tunnel and five stations (Principi d'Acaja, Bernini, Racconigi, Rivoli and Monte Grappa): there has been work done for a value of €9.1 million but provisions have been made for a total of €9.5 million. The claims made by the contractors are deemed "unfounded" in the report. Stations are OK while excavation of the tunnel which started on 19th February will proceed slowly in the beginning due to mucking-out restrictions. Arrival at the Bernini station is scheduled for April. There is already a 9-month delay due to the lack of organization and the late arrival of the Lovat EPB shield.
- Lot 5, €79.4 million, 2.5 km of tunnel with five stations (XVIII Dicembre, Porta Susa, Vinzaglio, Re Umberto and Porta Nuova): a total of €8.4 million of work has been approved and another €6 million is claimed. It is the trickiest section both because the alignment after Porta Nuova has been altered in November 2002 and because of the clayish ground which slows down the cut-and-cover construction of Vinzaglio, Re Umberto and Porta Nuova stations. The refurbished NFM EPB shield is scheduled to arrive in May.

The report concludes that rather than a full opening, it is more realistic commissioning the line from Fermi to XVIII Dicembre on 30th November, 2005. Read E-News Weekly 33/2002. Visit www.tunnelbuilder.com, it/32, www.metrotorino.it and www.satti.it

Spain. Euskotren, the Basque railway company, has the south railway bypass under construction in San Sebastian. The 3,289 m project is the dualling of the line between Añorga and Geriátrico and a brand new double-track line from Geriátrico to Easo station. The job requires to build the Aiete and Amara tunnels, totalling 1,604 m, and a 101 m-long underground station in Geriátrico. Contractor Altuna y Uria is using two Cat M318

Picture 3: Work on the Geriátrico tunnel.



hammers (60% of the drive) and a Paurat 169 roadheader (40%). Work started in May 1999. Visit www.euskotren.es

Venezuela. Construction of the first stage of the Valencia metro has been halted for lack of financial resources. Funds of up to US\$90 million would be necessary to carry on with the project but the government only released US\$50 million. After reaching the Cedeño station, the TBM will stand still. Visit www.tunnelbuilder.com, ve/12.

World Digest of Tunnel Renovation & Maintenance

Italy. By the end of March, Rete Ferroviaria Italiana is to tender the design for the safety work in the Peloritani tunnel in Sicily. This 12,750 double-track railway tunnel between Messina and Palermo has no emergency exit on its 8.2 km central stretch between Monte Santo (Messina side) and Torrente Gallo (Palermo side). Visit www.rfi.it

Portugal. The Encumeada bidirectional tunnel in Madeira is on the north-south link between São Vicente and Ribeira Brava. It is Madeira's longest road tunnel (3,086 m). Extensive renovation of the road surfacing is under way since February. The tunnel is opened since October 2000. The surfacing heaved and bumps appeared due to stress from bottom to top. Technicians believe the problem is due to expansive clay and bad water drainage. Repair work is at the charge of the contractor who built the tunnel. Work will last three months. Traffic restrictions have been implemented.

No preliminary geological or environmental impact studies was made prior to tunnelling. The regional directorate of roads claims geological investigation and core drills are only possible in areas easily accessible while Encumeada is a mountain site where site investigation is not possible but during construction.



Picture 4: New surfacing needed for the Encumeada tunnel.

Spain. FEVE (Ferrocarriles de Vía Estrecha), the narrow gauge rail company, has invited tenders to rebuild the walls of the Santoseso tunnel in Candamo (Asturias). Deadline 25th March, 2003. Tender value: €175,832. Visit www.feve.es

Spain. The government has approved emergency work worth €896,405 in the Maliaño, Caviades and Cartes tunnels in Cantabria. The existing lining of the Maliaño tunnel will be removed and replaced by galvanized steel plates and its watertightness, drainage and lighting will be improved. The Caviades tunnel, on highway A-8, will be monitored from a centralized control room in Los Tánagos. Lastly, in compliance with the new European directive on safety in tunnels, equipment will be installed in the Cartes tunnel, which will be on the Torrelavega-Los Corrales de Buelna section.

Companies

Slovakia. Skanska has acquired a majority stake in Slovakian civil engineering company Banske Stavby for an undisclosed price. The company will be consolidated within the Skanska CZ business unit as of the second quarter of 2003. This acquisition strengthens Skanska's competitiveness in the underground sector in the Czech Republic and Slovakia. Banske Stavby specializes in tunnelling and underground construction, mainly transport, water and sewage infrastructure. In 2001, the company reported sales of about SSK543 million. Founded in 1951, the company is based in Prievidza and has approximately 500 employees. Visit www.banske-stavby.sk