



Tunnel Valle di Lei

Kraftwerke Hinterrhein AG



Security and Communication

Case Study – Commend AG / Switzerland



Photos © KHR - Kraftwerke Hinterrhein AG



Project Details

Customer

Kraftwerke Hinterrhein AG

Type of Project

Tunnel Intercom

Basic Project Data

Emergency call solution for tunnels

Monitoring of fire extinguishers installed inside the tunnel

Technical Specifications

1 x Compact IP Intercom Server **GE 300**

7 x **WS 212V D** Vandal-resistant Emergency Call Station with 1 emergency call button and 1 regular call button digital version

1 x **G3-Tel** telephone interface for subscriber connections to a telephone system or directly to a telephone landline

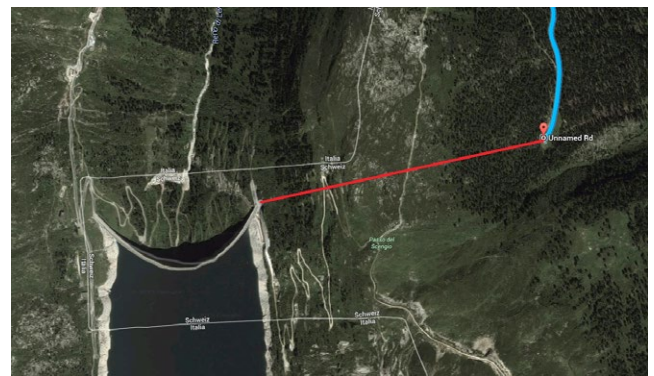
1 x **230V power supply** EU version

Misuse protection for fire extinguishers through monitoring via call station's input port

The Challenge

The power plant operator required an **emergency call solution for the 995 m tunnel** leading from Val Ferrera to Valle di Lei. Lago di Lei is a reservoir that measures 8 km in length and is almost entirely in Italy.

Although the barrage used to be on Italian territory as well, a land swap between the two countries brought it within Swiss borders.



Due to the highly fluctuating temperatures in the Swiss Alps, the solution had to be **robust and absolutely watertight**. Also, there are several fire extinguishers placed inside the tunnel, which had to be monitored continuously for removal or use. A further requirement was a button-operated connection to the control center to enable direct personal assistance at any time. This was achieved through the **integration of third-party systems** (in this case a telephone), which enables **seamless monitoring and control via the control centre**.

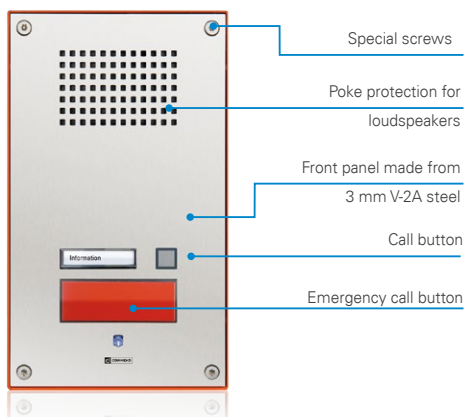


The Solution

The portals at both ends of the tunnel were each equipped with a **WS 212V D vandal-resistant Emergency Call Station**, and five additional WS 212 D terminals were installed along the tunnel at approx. 190 m intervals. Emergency calls are relayed instantly to the control centre at the Kraftwerke Hinterrhein offices via an **analogue telephone interface** which allows them to respond without delay.

Each of the vandal-resistant Emergency Call Stations has a fire extinguisher installed next to it. These are constantly monitored via the input port on the corresponding Intercom station. This way, if a fire extinguisher is needed in an emergency, the Kraftwerke Hinterrhein control centre is notified immediately, and any misuse or theft of the fire extinguishers can be prevented.

The vandal-resistant Series WS 210 Intercom stations are **IP 66 rated** and are designed to withstand extreme variations in temperature while providing a long product life span.



Vandal-resistant Emergency Call Station WS 212V D

Company Profile of Hinterrhein AG

Built between 1956 and 1963 at a total cost of 620 million Swiss francs, the three-stage group of power plants is operated by Kraftwerke Hinterrhein (KHR) and includes the turbine houses at Ferrera, Bärenburg and Sils. This makes KHR the operator of the largest power plant complex in the canton of Grisons.

The facilities utilise the water supply between Valle di Lei at 1931 m a.s.l. and Sils at 667 m a.s.l. **The core element of this power plant group is the 200 million cubic metre reservoir of Lago di Lei.**

From the beginning of the twentieth century, the Hinterrhein region has been home to various power generating facilities. 1942 marked the founding of the **Konsortium Kraftwerke Hinterrhein (KKH)** for the purpose of implementing a large-scale group of power plants with a shared reservoir at Rheinwald. However, the project had to be abandoned for political reasons and was later replaced by today's project with a shared reservoir at Valle di Lei, which is situated on Italian territory. For this purpose, a treaty was signed between Switzerland and Italy in 1949, which enabled the founding of the Kraftwerke Hinterrhein AG (KHR) on 10 December 1956. In September

1963 – after only six months of construction work – all facilities were completed and ready to commence operations.





Security and communication for tunnels

The communication platform for secure, smooth work flows



Photo: Reservoir barrage at Valle di Lei © KHR - Kraftwerke Hinterrhein AG

“ Since the Emergency Call Stations have been in place, our control centre in Sils can be reached around the clock. Integrating the solution into our central control system was no problem either.

*Customer statement by Th. Brenn,
Head of Control Technology*



Real life makes for the best stories

How do Commend solutions cope with the tough real-life communication and security challenges at locations all over the world? Real-life answers to this question are provided by the many case studies on customer projects – www.commend.com. Your local Commend contact person will be happy to answer any further questions regarding individual solutions.

Other Project References

Bypass tunnel, Henndorf, Austria

CLEM 7 Road Tunnel, Brisbane, Australia

Mamajskij Tunnel, Sochi, Russia

Railway Tunnel, Qazigund, India

Secure communication systems by Commend

Can you imagine a system that millions of people rely on every day, where every word has to count? That's the world of Commend! Secure, reliable communication is our passion.

As global market leader with over 40 years' experience in developing voice technology, we have integrated video and interfaces to third-party equipment that complies with international norms and standards. Commend is the natural choice for hands-free voice communication systems all over the world.

A strong network, worldwide.

COMMEND is represented the world over by local Commend partners to provide enhanced security and communication with tailored Intercom solutions.

www.commend.com

