



TRUSTING TETRA FOR NUCLEAR SAFETY

MOTOROLA SOLUTIONS' DIMETRA IP COMPACT DEPLOYED AT TEN RUSSIAN NUCLEAR POWER PLANTS

ROSENERGOATOM CONCERN OJSC

Rosenergoatom Concern OJSC is the operations subsidiary of Atomenergoprom, Russia's national power generation company. It is responsible for ensuring the cost-effective, safe generation of electricity at Russia's state owned nuclear power plants. It currently operates ten nuclear power plants with thirty-two reactors.

RC&C, a Motorola Solutions distributor, installed MPT1327 radio communication systems at the plants 15 years ago. However, the systems have become outdated and have some issues with reliability, coverage and system overloading. With the objective of enhancing safety at the plants, Rosenergoatom decided to introduce a new digital radio system as a standby system, to be used specifically in case of analogue system failure or during emergencies.

Following the recommendations of RC&C, Rosenergoatom Concern selected Motorola Solutions' Dimetra IP Compact TETRA digital radio system as its standby communications system.

Dimetra IP Compact has proved to be a reliable standby system at all ten nuclear power plants. Users have praised the robust voice and data communications, which would allow them to communicate efficiently with no interruption of service during analogue system failures or emergencies. Rosenergoatom Concern is currently also installing a network in the Crisis Centre in Moscow and a unified communications platform, which will enable all of the separate TETRA systems to have a direct radio link into this Centre. Real-time communication with the Centre's nuclear specialists, who have access to all the latest technology and methodology available, provides a further step in risk reduction.

CUSTOMER PROFILE

Company

Rosenergoatom Concern OJSC

Location

Russia, HQ Moscow

Industry

Nuclear Power

Partner

RC&C

Motorola Solutions Products

- Dimetra IP Compact
- Mobile Switching Offices (MSO) with geographical redundancy
- MTS4 and MTS2 TETRA Base Stations
- MCC7500 IP Dispatch Consoles
- MTP850 Portable Radios
- MTM800E Mobile Radios
- MTM5400 DMO Gateways/Repeaters

Approximately 3 base stations,
2 – 5 repeaters and 700 radios per plant



Rosenergoatom Concern is responsible for safety at its nuclear power plants. Reliable and robust communications are critical to its operations. It is delighted to have deployed a standby system from Motorola Solutions, as the world's leading manufacturer of TETRA standard base and subscriber equipment. It knows that Dimetra IP Compact has been successfully deployed at other similar sites throughout Russia. The infrastructure and subscriber terminals are the best suited to meet its stringent requirements with regard to reliability, safety, and functionality at its plants, both now and in the future.

CHALLENGE

To increase security and to expedite the operational decision-making process in case of systems failures or exceptional circumstances, Rosenergoatom Concern wanted to introduce a standby robust communications system with excellent audio and expanded functionality. It wanted to allow for data communications, to pinpoint the location of personnel and vehicles via GPS and AVL and to be able to link the networks at the power plants directly to its Crisis Centre in Moscow.

Rosenergoatom Concern decided to install a digital radio standby system for the primary and auxiliary production facilities in all ten of the nuclear power plants under its management. Following a tender process, it selected RC&C once again as the partner for this project, due to its experience in similar projects and previous successful collaboration.

SOLUTION

RC&C recommended Motorola Solutions' TETRA systems and radios. Following further discussions, the Dimetra IP Compact system was selected. Rosenergoatom Concern then conducted a series of internal tests on the TETRA equipment, including earthquake resistance tests at Rostekhnadzor, Russia's Federal Service for Ecological, Technological and Nuclear Supervision. The equipment passed all tests.

Bespoke specifications of the TETRA system, including connections to the other on-site telecommunications systems, were then designed and delivered in conjunction with RC&C and the Crisis Centre. The user interface was also translated into Russian. Personnel at the Leningrad Nuclear Power Plant were

involved in trialing the system once the local Motorola Solutions's Network Integration team had commissioned and integrated the Dimetra IP Compact systems. The pilot was a complete success. The first standby network was then installed at the Kalinin site.

Integral to the solution are the MSOs with geographical redundancy, which ensure that a network is always available to users at the plants, even, and especially, in the case of faults and disasters. The powerful MTS4 TETRA base stations also provide full redundancy. Both these and the MTS2 TETRA base stations offer optimum radio coverage, even in the reactors which are heavily shielded by thick concrete. Up to 5 additional repeaters have been installed in each plant to offer extended coverage, particularly in underground areas. Moreover the GPS, AVL application and Dispatch Console allow the exact location of workers to be identified and the fast, efficient dispatching of personnel. Transmit priority levels ensure emergency calls are prioritized.

BUSINESS VALUE

Rosenergoatom Concern now has a reliable, robust standby data and voice communications system with enhanced functionality, which it can rely on during other system failures and emergencies. The compact size of installation and reliability of the system has reduced installation and maintenance costs.

Rosenergoatom Concern is planning to build 28 new reactors between now and 2030. Dimetra IP Compact is fully flexible and scalable, so it can be easily expanded to offer coverage at the existing sites. It will be deployed as the sole communications system at any new sites.



Applications

- Standby mobile voice and data communications at the nuclear power plants and the Crisis Centre
- Tracking of personnel and vehicles
- Dispatching

Benefits

- Reliable communications
- Secure communications
- Vibration resistant hardware, suitable for areas prone to earthquakes
- Improved audio quality
- Increased channel capacity
- Prioritization of emergency calls

For more information on how Motorola Solutions' TETRA technology can provide secure, reliable and efficient communications for your business, please visit us on the web at www.motorolasolutions.com/XU-EN/Product+Lines/Dimetra+TETRA or access our global directory at www.motorolasolutions.com/enterprisemobility/contactus

Motorola Solutions Ltd. Nova South, 160 Victoria Street, London, SW1E 5LB, UK.

MOTOROLA, MOTO, MOTOROLA SOLUTIONS and the Stylized M Logo are trademarks or registered trademarks of Motorola Trademark Holdings, LLC and are used under license. All other trademarks are the property of their respective owners. © 2018 Motorola Solutions, Inc. All rights reserved. (05-18)