Case Study

Nuclear Power Plant Monitoring
Beznau, Canton of Aargau
Switzerland

GeoSIG
swiss made to measure

Background

The Beznau nuclear power plant in Döttingen (Canton of Aargau), Switzerland, is the world's oldest nuclear power plant in commercial operation, having produced energy since September 1969. It is part of the Swiss energy utility Axpo. The Beznau power plant is composed of two identical pressurized water reactor units (Beznau 1 and Beznau 2). The nuclear power industry is one where each country sets its own detailed quality and safety specifications within a framework that typically could include a high profile customer working in conjunction with consultants, safety bodies, main contractors and other interested parties as and when power generation requirements (either existing or new) reach a review stage.

Challenge

The scope of the Beznau Project was of a Seismic Monitoring System required to ensure that the Nuclear Power Station can receive sufficient warning to be safely shut down when seismic waves (motions) or other ambient dynamic earth activity has been detected by monitoring systems.

Solution

GeoSIG demonstrates the broad understanding of such complex business-to-business relationships by having completed nuclear power station projects for identified customers through representatives in key areas around the world. GeoSIG collaborates with a number of affiliates within the nuclear industry to ensure that their measuring instruments work within complete monitoring systems that meet output customer reporting requirements.

The project scope included developing and improving nuclear emergency and safety measures as well as awareness of the needs to contribute to regional seismic data management systems. To accomplish this, the project called for installation of six AC-23 triaxial accelerometers, six GSR-18 strong motion recorders, an SMS central processing system with GeoDAS software, and a fiberoptic communication interface.

The outputs are three nuclear power station system alarm levels: trigger, calculated, and system failure. Data is stored on an event basis, then laser printed as three-component time history.

Another Solution using GeoSIG instruments, effectively showing that quality and reliability can also be cost-effective.

Product links

AC-23 accelerometers
GSR-18 strong motion recorders
SMS central processing system
GeoDAS Software

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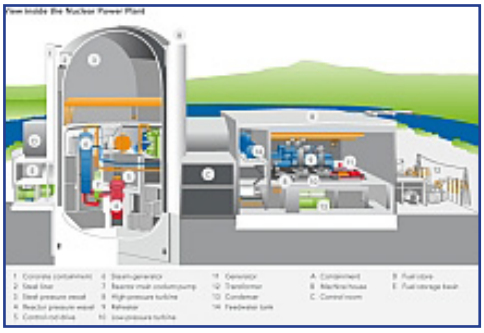
NPP Beznau, located in Döttingen.



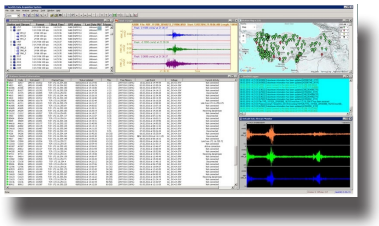
Above: A diagram of the power plant.

Left: The SMS central processing system, which uses GeoSIG proprietary software GeoDAS to monitor seismic instruments.

SMS

GSR-18 strong motion recorders

AC-23 accelerometers



GeoDAS software