

And the winner is...



Winning their third Instantel Innovation Award, Instantel Dealer, Dynamic Consult International (DCI) has established a solid reputation for innovation. The nomination for this year was particularly unique, as DCI's overpressure monitoring with an **Instantel® Minimate Plus™** monitor and high pressure microphone was used to define specifications for a watertight safety door to protect a nuclear reactor.

On the existing nuclear site of Flamanville, France, the Electricite De France (EDF) is constructing a new nuclear reactor named the European Pressurized Reactor (EPR). This 3.3 billion Euro (\$4.25 billion USD) project began in the summer of 2006 and is scheduled for completion in 2012.

The cooling process of the future EPR reactor will be done with sea water discharged 600 meters/1,969 feet offshore after treatment. To discharge offshore from the reactor, a

series of tunnels are under construction. The boring for the shafts and gallery are being completed using explosives.

For the safety of the inshore facilities, including the two active reactors in close proximity to the construction site, and to prevent flooding during the boring of the submarine gallery, a watertight safety door is to be designed and built at the inshore end of the gallery. The door, made of reinforced concrete, will be anchored in the rock and will remain closed for each blast during the excavation of the gallery.

The safety door must not only be watertight to prevent flooding, but must also resist air blast generated by the use of explosives. DCI was responsible to define and quantify these air blasts for the designers to specify the characteristics for the safety door. Using an **Instantel** high pressure microphone, able to measure from 125 to 190 dBL and resistant

up to 219 dBL, attached to a **Minimate Plus**, DCI measured the air blast during the boring of the vertical shaft inshore. This data was used to determine a pressure attenuation law for calculating the estimated overpressure during gallery blasts.

To avoid damage to their **Instantel** instrumentation, and without interfering with the air overpressure measurement, DCI made a special metal cage to protect the microphones and **Minimate Plus** monitors. The cage with the monitoring equipment was descended into the shaft prior to a blast. The pressure levels recorded (180 dBL at 30 meters /98 feet from the blast) showed the effectiveness of the cage and the pertinence of the selected high pressure monitor.

Why not put Instantel Vibration Monitors to work for you? Contact Instantel or visit our website to locate the authorized dealer closest to you.



Certified to the ISO 9001:2000 Quality Standard • T: (613) 592-4642 • F: (613) 592-4296 • E: sales@instantel.com
www.instantel.com