



## Interview

June 2007

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### Motoring ahead with global certification



Swedish-Swiss company [ABB](#) is a global leader in power and automation technologies with more than 100 000 employees and offices in more than 100 countries around the world. One of its business units, [ABB Motors](#), makes a variety of products, including motors for use in hazardous areas, known in industry jargon as "Ex equipment". They are mostly used in fan, pump and compressor



applications in the oil and gas, petrochemical, chemical and pharmaceutical industries.

The largest powers and sizes are used predominantly in onshore or offshore exploration and production of gas or oil as well as in pipelines or terminals while most of these Ex motors are used in the refining, cracking, distilling and mixing processes. More and more of them are supplied with frequency converters designed to improve performance, to save costs and reduce CO<sub>2</sub> emissions.

These motors must be tested and certified prior to use and, for this, ABB relies on the IEC's scheme for certification to standards relating to equipment for use in explosive atmospheres ([IECEX Scheme](#)). ABB uses [Laboratoire Central des Industries Electriques](#) in France, part of the Bureau Veritas Group, to test and certify its products to IEC standards, a process that, depending on the complexity, can take up to 12 months. LCIE is a certification body that participates in the IECEX.

Over the years, the two have built up a close working relationship that both see as important to doing business together successfully. This has recently resulted in the certification of quite a large range of ABB Ex motors (0.55 kW up to 1 100 kW) to the demanding international standards laid down by the IEC.

#### You bet your life

Because lives depend on Ex equipment functioning properly at all times, certifying it is demanding. Michel Lhenry, project manager and Ex certification co-ordinator with ABB Motors, who is also chairman of CENELEC's Technical Committee 2, which prepares European standards for rotating machinery to cover all relevant essential requirements given in European Community Directives, says: "There are lots of documents, you need to work very fully with the competent body and you need to know that they are working seriously and effectively."



This Progress Cavity Pump, used for pumping heavy crude oil, is driven by two ABB motors.

In other words, the manufacturer seeking IECEX certification does not want to be talking to an engineer one day, only to find that the next day that engineer is working elsewhere and doesn't come back to the project for a couple of weeks. Both manufacturer and test house need to be fully committed to the relationship and to the common project.

This means a good working relationship is important to ensure that certification is done properly, effectively and efficiently. ABB and LCIE have the same market interests and pressures and, relying on the IECEX, therefore helps to make certification easier.

Because of the level of detail required, it's also important that the competent body carrying out the testing knows what questions to ask. "Some bodies ask for all sorts of extra details that may not be related", says Lhenry. The hard-pressed manufacturer knows that the test house only needs the relevant information. "You don't want to be asked for

anything extra", he adds.

Marc Gillaux, Deputy Director of the Ex Division of LCIE, comments that ABB is a large company and if it feels that it is sometimes put under pressure from over-demanding competent bodies, how much worse must this effect be for a smaller manufacturer? "There are some smaller manufacturers within IECEx", he says, "who will have to make the decision whether to go through IECEx testing or just to go for certification within a single country."

### **Going for worldwide acceptance**

It is for this reason that both Lhenry and Gillaux applaud the move by IECEx to push for worldwide acceptance of its certification. "Some notified bodies still require more information and more test information, even when they've had the test report," says Gillaux. "That can be difficult to justify."

Gillaux says that the IECEx test and certification procedures are exhaustive enough to satisfy the most demanding of customers. Those customers should be content with the procedural integrity of the test practices.

He adds: "If that [asking for additional information] continues to happen, the Ex manufacturer will continue to incur delays in market access and costs." Gillaux says that Ex certification bodies must learn to accept that certification through one country's chosen test centre means that the certified product is OK for use within their own country.

Both men agree that IECEx does have positive issues and that generally the feeling about IECEx is favorable and growing around the world. "We should have worldwide certification", says Gillaux. Although IECEx certification is recognized in some countries, it needs to be pushed elsewhere. "This would avoid the need for local certification" he adds.

IECEx Scheme Secretary, Chris Agius, points to the IECEx rules that place an obligation on member Ex certification bodies to use test results from others.

### **Reputation on the line**

Manufacturers can choose any certification body (CB) in the IECEx system because it relies on peer assessment to guarantee the quality of the work done: any certification body in the system can inspect and assess any other. The result is that inspections and assessments tend to be very rigorous because a CB accepting one lab is, essentially, putting its own reputation on the line.

It makes sense for certification to be harmonized. With products designed for such exacting environments, no manufacturer is going to want to go through multiple certification procedures as this involves both additional time and additional expense.

Given the expense involved in specifying, producing and testing IECEx-compliant products, it is probably not surprising that many of them are expected to have a long lifetime and to spend a long time in operation. As a result maintenance and repair work may well be required. IECEx is therefore introducing a scheme to enable maintenance and repair workshops to be certified as IECEx-compliant, in line with the second edition of [IEC 60079-19](#).

"This will bring real benefit to the end user", says Gillaux. "Products need to be adequately maintained and that's difficult at present", he adds. "This service will make it much easier to obtain maintenance." Lhenry adds, "IECEx approved workshops would provide a real marketing advantage. They would also offer real practical help for end users, allowing them to find the nearest workshop to their plant for carrying out maintenance or repairing Ex equipment according to IEC Ex safety requirements from relevant certificate."

### **Future developments**

Currently ATEX certificates (from French: **atmosphères explosibles**) are mandatory for products within Europe. This comes from the [European Directive ATEX 94/9/EC](#). These certificates can be granted for a single product or for a series of products. The same is not currently true for IECEx, where specifications are aimed at product series.

"It's hard work for the manufacturer of a single product", says Gillaux. He says that IECEx needs to introduce that kind of standardized approach to cater for certification of one-off or limited run products. "That would be good for the manufacturer", he says "and it would also allow the certifying body to help the smaller customer."

Another improvement would be to ensure harmonized use of the standards throughout the Ex industry so that all references are the same. Currently some companies use the latest standards for their products and some use earlier ones, says Gillaux. Ensuring that all companies and testing bodies use the latest standards would mean that everyone was starting from the same level playing field.

Both men, although ostensibly coming from different sides of the marketplace — one as a manufacturer, the other as a representative of a testing and conformance body — recognize the worth and the future of IECEx. Co-operation between two such parties is very much in the spirit of IECEx, which surely exists to move the marketplace forward by helping to smooth the path between manufacturer and user, while preserving safety in this highly regulated field.

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\* [CENELEC](#) is the European Committee for Electrotechnical Standardization, the European-level equivalent of the IEC. ([back to text](#))

*(June 2007)*



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