

Old approach to new ideas

Every so often a new concept comes along that doesn't fit the box. American Bureau of Shipping (ABS) has a sure-fire way to deal with these bright ideas.

“If someone comes to us with a novel idea, we don't tell a client ‘well, we can't work with you because we don't have rules for this’,” says ABS vice president James Gaughan. What the organization will do is put a “novel concept” process into action that will culminate in an approval in principle (AIP).

“A very important guide that we have developed in the past 10 years is the guide on novel concepts. This is a systematic approach to reviewing and approving a novel concept,” says Gaughan.

Based on risk analysis and safety studies, the process is well prescribed and means ABS does not have to wait until it has a guide or rules for a particular application in order to issue an AIP.

“AIP means we have satisfied ourselves that the level of safety is equivalent to what has been established in other published rules that we have.

Approval in principle (AIP)

- Not a standard procedure for new construction projects
- Granted on novel concepts such as ABB's DC-Grid
- Means the concept is valid and is capable of culminating in a successful project built to ABS class, provided the correct path to final approval is followed
- ABS works with the designer to understand the concept and identify potential hazards
- The path towards final acceptance and construction may include safety studies, analyses and prototype testing
- AIP gives the designer confidence to carry on with the project

"We have rules for many vessels and marine structures, so we are going to compare it to a comparable system. We identify and learn what the new concept is, what the hazards are, then we look at similar processes.

"We also have the agility to publish new guides fairly quickly. A good example is gas fuel ships; everybody wants to burn LNG. We published a guide for gas fuel ships a few years ago and all the elements that were involved in that were a combination of requirements we already had in place.

"We are going to look at the containment system against our rules for liquefied gas carriers. Operators are burning methane in engine rooms, something they've been doing since 1964. The industry knows how to do this. Basically it's a case of putting the right pieces of the puzzle together," says Gaughan. "Then we had to identify new hazards introduced and deal with those."

He describes the novel concept approach as "an alternative path" for the technology provider.

"A technology provider like ABB that is doing a lot of work in research and development, coming up with new ideas and technology, is somebody that we should be more than willing to work with, and we do this through our novel concept process," says Gaughan.

The novel concept process starts with a company submitting drawings to ABS, which can be shared with its divisions throughout the world.

"Normally a young engineer will look at a concept, then check to see if it is covered by one of our published rules. If not, they would go to the ABS resource center to see if there is a process instruction that addresses the concept. If there isn't, the engineer would review the situation with their supervisor. The issue would be elevated to the assistant chief engineer in the division, who would seek guidance from the Chief Engineer's office, which is at the corporate level."

Once an idea is identified as a potential novel concept, the chief engineer sends out a request form to the originator plus the other three ABS divisions requesting comment. So, as an example, if a proposal was submitted to the London office, it may eventually be considered by the engineering staffs in Houston, Singapore and Shanghai.



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With ABS engineers all over the world working with designers and shipyards, someone typically has the experience to assist in assessing whether the concept has been considered before or if it is a novel one.

"We have a requirement on urgent matters that people respond within 48 hours," says Gaughan. "In my department we look at the answers coming back from the other three divisions and we have our own specialists in various disciplines. I have four chief engineers and an assistant chief engineer specializing in machinery, structures, offshore engineering and metallurgy, as well as an assistant chief in charge of statues, so I get them involved."

As Gaughan says, "So, when we're developing rules, it's not just an engineer sitting in Houston writing things down."

Indeed, with so much experience at its fingertips, ABS can draw on the knowledge and training needed to find alternative solutions to satisfy the intent of the rules.

Text: Helen Karlsen