Whenever an item of process equipment fails, breaks down or is found to have deteriorated there needs to be an assessment of whether the equipment is fit for ongoing service i.e. can it continue to operate safely? The outcome of the assessment may be that the equipment can safely operate without any restrictions, can operate for a short period of time only, can operate with restricted operating conditions, or it may not be safe to operate without a repair or replacement.

The top priority for any operator is to ensure that whatever is decided will maintain safe operations. Taking this as a given then an operator will want a solution that minimises any production loss and cost of repair or replacement.

The optimum solution will depend on many factors, including; the level of associated risks; the possible risk mitigation measures; the production impact; the costs of possible repairs or replacements; the degree of damage to the equipment. Sometimes the optimum solution is clear, but often making the right engineering judgement can be very difficult. In these situations the engineering judgement must be made by someone with considerable experience of all of the influencing factors and of making such judgements on the relevant equipment - a rare type of engineer.

The consequences of making the wrong judgement can be significant, losing production, costing money or at worst resulting in a safety and / or environmental incident.

What we offer
ABB’s fitness for service assessments are always carried out by engineers who are very experienced and qualified in the equipment being considered. The assessment will review the equipment’s fitness for service and help to determine any necessary actions to repair or extend the life of the equipment.

We will identify its current condition and the level and rate of deterioration. This can be done using a number of techniques including design analysis, finite element analysis, physical inspection and studying the equipment history. We also consider the equipment’s compliance with engineering standards and legislation, although a deviation from engineering standards may not always mean that equipment is not fit for service.

When required we can also specify, organise and control any remedial works. We can also carry out full failure analysis to make sure that lessons are learned to prevent future failures of the equipment or other equipment.
In many cases the decision about fitness for service is not black and white. Often the solution will be to return equipment to service, maybe involving a temporary repair, but only for a limited time until a fuller repair or replacement can be carried out in a planned way. On other occasions the equipment may be ‘de-rated’ to allow it to go back into service, which can be a short or long term solution depending on the situation.

The breadth of functional expertise available to ABB, which allows fitness for service assessments across all types of equipment includes:

- Pressurised equipment (pipes, vessels, tanks etc.)
- Rotating equipment and machinery
- Control and instrumentation
- Electrical equipment and distribution (HV and LV)
- Civil and structural
- Materials and corrosion

**Benefits**
The fitness for service assessments that ABB carry out provide:

- Confidence that the proposed solution is safe to operate
- Minimise the costs of any repair of replacement
- Minimise the production losses by getting the equipment back into service rapidly
- Practical solutions based on many years’ experience of providing such solutions

**Why ABB?**
Our engineers and consultants have recognised experience and expertise across all of the engineering functions. The experience has been gained across many hazardous process industries and with operators where we have long term relationships and therefore see the results of our technical judgements in practice.

We have a strong operating heritage, with many engineers coming from an operating company background which has taught them to develop pragmatic and cost effective solutions.

ABB has a broader capability around asset integrity, inspection and process risk management that can be called on to support assessments.