Condition assessment is a process that measures the actual and required condition of an HVDC converter station.

After a station has been in operation for a number of years, a condition assessment can help determine plans to ensure future reliable operations. The condition assessment of complex HVDC station equipment such as converter transformers, control and protection systems, breakers and converter valves is an important tool in this process.

In a fast changing power generation environment, asset managers must keep pace with the challenge of reliably producing, transmitting, distributing and delivering electrical power. Ageing assets, spiking energy demand and the need to avoid unplanned outages are just some of the challenges utilities and industries everywhere face today.

Recommendations supported by detailed analysis and historical evaluations

Condition assessments create insights and priorities supported by maintenance history assessments, visual inspection and monitoring, documentation of overall asset condition or an entire HVDC station, as well as estimations of plant life expectancy and recommendations for extending plant lifetime. They also identify the actions needed to maintain assets to their required standards. A condition assessment helps customers judge whether an upgrade or a replacement will support the reliable future operation of an HVDC operation.

A way to control maintenance costs and achieve high reliability of power delivery with older assets is to graduate from traditional time-based maintenance programs to condition-based or reliability-centered maintenance programs.

Condition assessment service typically consists of:

- Historical analysis of an individual asset, or an entire HVDC plant
- Evaluation of actual equipment system status focusing on prioritized high-risk assets
- Recommended actions for an individual asset or entire plant
- Summary/report to define recommended troubleshooting actions
- Spare part availability for prioritized assets

Key benefits of ABB HVDC condition assessment recommendations

- Reduced major outages/failures and unplanned maintenance costs
- Life extension
- Improved availability and reliability