Process Hazard Review (PHR) in power generation

PHR is a methodology used by ABB’s team to identify hazards and assess risks on existing facilities. It’s used to achieve continuous process safety improvements.

The power generation sector faces a number of challenges in meeting the expectations of regulators and often stakeholders with regard to process safety.

To overcome them, it must:

- Recognise the potential for major accident hazards
- Increase its focus on process safety following incidents such as Buncefield and Texas City
- Rise to the challenge and achieve continuous safety improvements with ageing assets
- Demonstrate that current risk reduction measures are fit for purpose
- Be constantly aware of rising standards and stakeholder expectations
- Conduct risk assessments of existing facilities required to meet regulatory or company standards
- Use a structured, time-efficient methodology which is acceptable to external authorities
- Convert recommendations arising during reviews into specific risk reductions

What we offer

PHR is a well-proven method developed in the 1990s, that identifies key process industry safety issues. Much quicker than comparable techniques such as HAZOP, it minimises the time required for busy operating staff. PHR ensures that all relevant operational learning and experience is built into the risk assessment. It also meets the requirement for cyclic review of major accident hazard assessments required under the COMAH regulations.

PHR uses an independent, specialist facilitator to take people beyond their normal experience. He or she guides and challenges a team of experienced, but not necessarily PHR-fluent, operators, engineers and technical site-based staff so that nothing is missed. Checklists and guide diagrams are used to identify credible loss of containment scenarios, to understand the consequences and raise any concerns about current layers of protection and their adequacy. After we’ve made the initial risk study, we follow up prioritised recommendations and develop a clear action plan to tackle the key safety risks.
The overall PHR process allows for the preparation of a risk-based improvement plan for a facility and provides a platform for continuous improvement in health, safety and environmental protection. We provide support throughout the process: from identifying the risks to developing solutions and providing an overview of the whole risk-reduction programme.

We can also run a PHR re-validation every five years to reconfirm safe operations. This entails checking completion of the actions from the baseline PHR and assessing any intervening incidents, modifications or changes in technology or standards.

Benefits
- Reduces risk of major accidents
- Helps maintain the operating licence
- Helps achieve continuous process safety improvement for existing facilities
- Quicker than comparable techniques
- Meets COMAH regulations
- Increased staff awareness of safety risks
- Peace of mind

Why ABB?
ABB has a long track record of identifying hazards and assessing risks and achieving continuous safety improvements in both process and manufacturing industries.

Leading experts in this field, our technical expertise has enabled us to develop a widely-adopted methodology.

Our engineers and consultants have operational backgrounds and make pragmatic technical judgements based on their experience. It’s an approach that ensures cost-effective, practical-to-implement solutions which work.

We prefer to work in partnership with our customers, where we deliver benefits together and transfer relevant skills such as greater staff awareness of safety risks, for ongoing improvement.

We can help implement the resulting actions to ensure benefits are realised, by calling upon our broad range of expertise from across our service areas.