The Guardian newspaper recently hit a wall of non-response when it raised concerns about the possibility of an oil well blowout in BP's proposed drilling operations in the Great Australian Bight.

The facts are that bolts on drilling rigs used in other parts of the world have been found to be defective, with the potential to fail catastrophically. When asked whether its operations were at similar risk, BP referred The Guardian to its subcontractor, Diamond Offshore, which reportedly failed to respond to emails and phone calls.

Whether or not these technical concerns are justified, this is a public relations disaster for BP, Diamond Offshore and even for the Australian industry regulator, the National Offshore Petroleum Safety and Environmental Management Authority.

BP, in particular, can ill afford such bad publicity. Six years ago it suffered a disastrous blowout of its Macondo well in the Gulf of Mexico, which killed 11 men and caused more than US$40 billion of environmental damage along the US coast.

It's perfectly understandable that people will ask whether the same thing can happen in the Great Australian Bight.

Lessons learnt?

BP claims to have learnt the lessons from the Gulf of Mexico incident, and to have incorporated them in its drilling plan for the Bight (as outlined in section 6 of its environmental overview). However, the lessons it refers to are drawn from its own report on the accident, which dealt primarily with technical issues rather than the underpinning organisational factors.

Other major reports and commentary have identified a range of organisational failures that contributed to the blowout. BP has not shown that it has learnt these bigger lessons.

One of these organisational causes was the system of bonus payments made to employees at all levels, which created continual pressure to minimise costs and maximise drilling speeds. A key performance indicator when calculating employee bonuses was “days per 10,000 feet of well drilled”.

These incentives generated pressure to ignore anomalies or warnings that things might be amiss, and to just get on with the job. Of course, BP is not alone in this – these are industry-wide practices. But to satisfy a sceptical public, BP needs to show that it has addressed this issue.

Second, BP was using the wrong indicators of risk, which meant that it was systematically misleading itself and others about the risk of blowout at the Macondo well.

Its primary indicator was the number of cases of “loss of containment” – that is, incidents when oil was spilled into the sea from a hydraulic hose or other piece of equipment. Of course these spills are environmentally undesirable, but the number of these relatively minor incidents does not in itself indicate a risk that the well will blow.

Far more significant is the number of “kicks” – incidents in which operators temporarily lose control of the well and high-pressure fluids begin forcing their way towards the surface. If operators do not act quickly to control kicks, they can develop into blowouts, and indeed this was one of the contributing factors in the Gulf of Mexico blowout.

Here is another relevant indicator. Drilling wells involves pumping cement down at various times to seal joints, and to plug the bottom of the well when drilling is complete but the well is yet to begin production. Cementing jobs sometimes fail, and in fact the regulator in the Gulf of Mexico found
that half of all blowouts were initiated by a cementing failure.

The number of cementing failures would therefore seem to be an important indicator of risk. BP again needs to show it has developed a list of key risk indicators for its proposed drilling operations in the Bight, and that things such as employee bonuses will not work to counteract this system.

Bending the rules

One of the most insidious processes that contributes to many major accidents is the "normalisation" of substandard practices. Typically, this happens when people start taking shortcuts with no penalty, which gives the impression that strict compliance with safety regulations or standard engineering practices is unnecessary. Eventually, however, an unusual set of circumstances may catch them out.

Some companies have a formal process for authorising deviations from the standard practice, in cases where strict compliance seems unnecessary or onerous. In isolation, such deviations may seem to involve a negligible increase in risk, but if the number of such authorisations is not controlled, the cumulative increase in risk may be considerable.

After the Gulf of Mexico disaster, BP itself proposed that the number of authorised deviations from approved engineering practices be treated as an indicator of risk, and that this number should be kept as low as possible. It would be good to know if this principle will be applied to its drilling activities in the Bight.

Another critical lesson from the Gulf of Mexico spill is that senior managers should ask the right questions when they visit operational sites, as they routinely do. Senior managers were actually touring the rig that was drilling the Macondo well at the time of the blowout. But they failed to ask any questions about how well the rig was controlling the blowout risk. Had they done so, the accident might never have happened. Has BP learnt that lesson? It is not one that was identified in its own report, so we cannot be sure.

Accident prevention depends on understanding and counteracting the human and organisational factors that lead to accidents, as well as the technical ones. The documents that BP has publicly released about how it intends to drill in the Bight describe how it has learnt the technical lessons, but are silent on the human and organisational lessons.

Spelling out these lessons, and whether BP really has learnt them, might give the public more confidence in the drilling proposal.

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Andrew Hopkins is the author of a recent article published by (but not funded by) the Australia Institute, titled "From climate pariah to climate saviour? What the petroleum industry can do about climate change".

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