Beyond Compliance Monitoring: New Strategies for Safety Regulators

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Although the advent of general duty legislation makes the task of the regulator far less clear-cut, inspectorates are still involved in monitoring and to some extent enforcing compliance with rules of various sorts. Monitoring compliance in this way is crucially important, but this article seeks to identify strategies that go beyond compliance monitoring, by drawing on research on the causes of accidents and the nature of organizations. The strategies identified include: auditing the auditors; proactive investigation; supporting company safety staff; advising on organizational design; exposing performance; and promoting regulatory crisis. These are all ways in which regulators can encourage companies to improve their management of risk, ways that are not focused on identifying noncompliance with rules of any sort.

I. INTRODUCTION

The title of this paper contains an implicit assumption—that safety regulators are engaged in a process of monitoring compliance with rules of various sorts. In an era of general duties legislation this may seem odd. It will be useful therefore to justify the assumption before examining ways of going beyond compliance monitoring.

Duty of care legislation requires employers and others to maintain a safe workplace so far as is reasonably practicable, or, in the language of risk, to reduce risks to a level that is as low as is reasonably practicable. After an accident has occurred, it may be easy enough to establish that the employer (or other duty holder) had not complied with its duty of care. But in the absence of an accident, how is the regulator to decide whether the duty holder is in compliance?¹ In a formal sense it is open to the regulator to give a categorical answer—yes, the duty holder has gone through the risk management process and has a systematic approach to OHS management, or no, it has not. But this is clearly inadequate. The real questions for the regulator are how *well* the duty holder has carried out the risk management

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process and how *effective* its controls are. These are questions of degree, which do not allow of categorical answers. In short, from this point of view, it is not possible to give a simple answer to the question of whether or not a duty holder is in compliance (Bardach & Kagan 1982).

The problem comes into focus painfully in the matter of prohibition and improvement notices that are available to inspectorates in many Robens-inspired jurisdictions. Inspectors may prohibit an activity if there is an imminent danger to health and safety; they may issue an improvement notice in less extreme circumstances (Hutter 1997: 94).² How is an inspector to decide whether there is an imminent danger? Under a prescriptive regime, the inspector might point to a regulatory violation as the reason for the notice, but in the absence of such a violation the inspector must fall back on subjective judgment of the level of risk.

In an empirical study of decision making by inspectors, Hutter notes that many things affect their perceptions of risk. They may be influenced by guidance notes and codes of practice, by industry practice, by previous accidents they have investigated, by the knowledge that there is a readily available risk reduction remedy, such as a machine guard, and so on (Hutter 1997: 95–6). In order to impose a prohibition order, then, an inspector must make a judgment that the level of risk is unacceptable, a judgment that is informed by the inspector's expertise and that cannot be deduced simply from any regulatory requirement. The judgment about whether there is immediate danger, therefore, is not a judgment about compliance, except in the most formal sense; it is a judgment about risk. Whereas under a prescriptive regime, those drafting the prescriptive rules are making the judgments about risk and inspectors judge compliance with those rules, in a non-prescriptive regime it is the inspector on the spot who must make the judgments about risk. A non-prescriptive regime, in short, places far greater responsibility on its inspectors.

The UK Health and Safety Executive has recently issued an “enforcement management model” designed to assist with this problem. Inspectors are asked to determine the “risk gap,” which is the difference between the actual and a benchmark or acceptable risk. The model states that:

The first step in determining the risk gap is to assess the levels(s) of actual risk arising from the dutyholder's activities. Inspectors should base this judgment on information about hazards and control measures informed by their training, experience, guidance and other relevant sources of information (Great Britain. Health & Safety Executive 2002).

It is clear from this statement that the enforcement management model leaves the inspector in much the same situation described by Hutter.

Nevertheless, even in a nonprescriptive regime there remains a compliance monitoring role for regulators. First, there may be specification standards prescribed by law that can be directly enforced. Second, regulators can monitor compliance with nonbinding codes of practice and draw the

attention of the employer to cases of noncompliance that they identify. Even though such noncompliance may not constitute a legal violation, employers will normally be motivated to comply, since in the event of an accident, noncompliance with such codes may constitute evidence of failure to exercise a duty of care. Third, inspectors in some regimes may audit the employer's safety management system, drawing cases of noncompliance to management attention. In safety case regimes, in which the safety management system has been licensed by the regulator, noncompliance with the safety management system may technically be a regulatory violation.³ In these regimes, therefore, regulators are back to monitoring compliance with prescriptive rules, rules that are chosen by the employer but which, once accepted by the regulator, become regulatory requirements. Beyond this, regulators may even monitor for compliance with good industry practice, regardless of whether this has been codified in any way.⁴

It is essential that regulators maintain this compliance monitoring role, even in nonprescriptive regimes. But the purpose of this article is to sketch ways in which they can go beyond compliance monitoring, ways in which they can encourage duty holders to improve their management of risk, independently of the issue of compliance. The article originated as a presentation to an international conference of offshore petroleum safety regulators. For this reason its focus is on high-risk industries, which are already quite extensively regulated, but where regulators are looking for ways to improve their effectiveness. My discussion draws on contemporary research about how organizations operate and how accidents occur.

II. HOW ACCIDENTS OCCUR

There is a strong tradition in corporate crime research that draws on organizational theory and sees corporate crime as stemming from various kinds of organizational failure, such as defective operating procedures and communication failures (Fisse & Braithwaite 1993: chapter 4). Recent research on the causes of accidents parallels this work and extends it by examining in considerable detail the kinds of organizational failures that can lead to accidents. Reason, for instance, identifies eleven organizational failures types, among them such things as design, maintenance management, procedures, error-enforcing conditions, incompatible goals (mainly safety versus production), and communications (Reason 1997). Rasmussen points out that it is not just failures within the organization concerned that contribute to accidents; decisions taken by regulators and even at the government level play a part. He advocates the development of "accimaps," showing how factors at these different levels interact (Rasmussen 1997). There is also a rich body of case studies showing how organizational and other factors combine to generate accidents (Kletz 2001). More recently, accidents have been analyzed as stemming from aspects of organizational culture. For

instance, the Columbia space shuttle disaster of 2003 was attributed primarily to the culture at NASA, which was seen to have changed little from that which prevailed at the time of the Challenger disaster, seventeen years earlier (Columbia Accident Investigation Board, 2003). The suggested remedy is a “safety culture,” and there has been considerable debate about just what this means and what organizations need to do to create such a culture (Reason 1997: ch 9; Weick & Sutcliffe 2001). This is not the place to review all this literature. Suffice it say that the suggestions that follow arise in one way or another from this body of work.

The following strategies will be discussed:

- auditing the auditors;
- proactive investigation;
- supporting company safety staff;
- advising on organizational design;
- exposing performance; and
- promoting regulatory crisis.

III. AUDITING THE AUDITORS

Routine safety auditing rapidly degenerates into a tick-a-box exercise.⁵ Audit schedules typically ask questions such as:

- Is there evidence that hazards have been identified?
- Have workers been trained?
- Is personal protective equipment (PPE) available?
- Are procedures being followed?

Each of these questions is inadequate. Major accidents have occurred because

- although many hazards had been identified, a crucial hazard had not (Dawson & Brooks 1999);
- although training had occurred, it was inadequate (McInerney 2001);
- although PPE was available, it was not the appropriate PPE (Clarkson, Hopkins & Taylor 2001);
- although procedures existed and were followed, they were not appropriate procedures (Appleton 2001).

So the questions auditors should preferably be asking are:

- Have *all* hazards been identified? Or more realistically,
- How good is the hazard identification methodology?
- How good is the training?
- Is the PPE fit for purpose?
- How adequate are the procedures?

These questions are far more challenging. They cannot be answered with a tick in a box, and answering them may require a great deal of work. But if the quality of auditing can be improved in this way, the quality of risk management will certainly improve (Appleton 2001).

There is clearly a role for regulators in encouraging auditors to ask more probing questions about the effectiveness of the organization's risk management system. If the regulator can identify a significant hazard that has not previously been identified, or a procedure that auditors say is being followed, but that on examination turns out to be of little value, the effectiveness of company auditing is brought into question. The more embarrassing the oversight, the better. If regulators regularly find problems that audits have failed to identify, the audit system can be expected to undergo continuous improvement. The strategy, then, is to traverse the same path as the auditor and identify things missed. It is, in short, to audit the auditor (Hopkins 2000: 91).

IV. PROACTIVE INVESTIGATION

At its best, incident investigation aims to identify the system failures that allowed an incident to occur. Good incident investigations ask a series of "why" questions that link the incident back to management failures and aspects of organizational culture.⁶ Such investigations are time-consuming and resource-intensive and are usually only carried out following an incident where there has been significant injury or damage, or following an obviously dangerous occurrence. They are essentially reactive investigations, after the event of concern.

It is also possible to deploy this style of investigation proactively, before any harm has occurred. This is well understood in the case of obviously dangerous near misses, such as when a crane drops its load but no one is hurt. But it can also be deployed for tiny matters, such as an isolation tag missing, or an undetected piece of corrosion in a high-pressure gas line. These do not themselves involve harm, but they can be regarded as tell-tales, as warning signs that the management system is not functioning quite as it should. For instance, why was the pipeline corrosion not picked up in routine inspections for corrosion? Has the frequency of such inspections been reduced as a cost-saving measure? If so, have other critical safety systems been similarly affected? Given that the corrosion was obvious to the inspector, it must have been obvious to other employees. Why had they not reported it? Clearly the incident/hazard reporting system was not working optimally; why not?

By applying the same investigative style to such matters, although not necessarily the same level of resources used in full-scale accident investigations, the inspector may uncover important ways in which the management system is failing, significant risks that are not being effectively controlled.⁷ In a sense the inspector is engaged in detective work, using whatever clues are available, to uncover what might be going wrong. The crime investigation

metaphor may not be quite apt because the whole point of a proactive investigation is to carry out the investigation before an incident occurs. Arguably, however, the very best detective work is of this nature.

There is an important line of research that supports this approach. All accidents, major and minor, are preceded by warning signs, indications that something is amiss, which, if attended to, would have averted the accident (Reason 1997; Turner 1978; Weick & Sutcliffe 2001). Prior to the Moura coal-mine explosion, for example, miners occasionally reported detecting a “tarry” smell, suggesting that coal might be burning in some remote part of the mine. Management could not confirm these reports and dismissed them, but the coal was indeed burning, eventually igniting a methane gas explosion (Hopkins 1999). Proactive investigation is really a strategy for taking these warning signs seriously and identifying ways in which safety management systems may be failing, before an accident occurs.

Proactive investigation has one significant advantage over reactive investigation. After a harmful incident has occurred, individuals may be fearful of blame and likely to be less than cooperative. Moreover, the organization itself may be as uncooperative as it possibly can, in order to avoid disclosing information that might make it liable to legal action (Baran 1997). Where an inspector carries out a proactive investigation, however, there is far less reason for companies or individuals to be fearful and far more likelihood that the investigation will be seen as an aid to prevention, rather than as a prelude to punishment.⁸

V. SUPPORTING COMPANY SAFETY STAFF

Large organizations have internal staff with a specific responsibility for safety. This is part of the wider phenomenon of compliance staff in large organizations, whose job is to ensure compliance with regulations protecting shareholders, customers, workers, the environment, and so on. Many studies have shown that these internally located compliance professionals are vital for organizational compliance. The secret to their success is the degree of “clout” they wield. Where compliance staff have sufficient resources, where they have high status within an organization, and where there are direct lines of communication between compliance staff and chief executives, compliance professionals will have clout. They will wield more influence than the immediate line managers, and in cases of conflict, their views will prevail (Parker 2002: 31, 50, 107, 181, 184).

One of the conditions for wielding clout is that compliance professionals are supported in a variety of ways by the external environment, and particularly by regulators. If company safety officers can appeal to regulators for support when they take an unpopular line, their clout is enhanced. If regulators seek them out and consult with them, and then champion their concerns at a higher level, their influence is expanded (Parker 2002: 183). Regulators therefore have an important role promoting the effectiveness of these internal

change agents. The benefits are, of course, mutual. Inspectors who consult with company safety officers may be able to identify deficiencies in company systems far more quickly than if they have to identify these things for themselves. Creating an alliance with these internal compliance agents is therefore a valuable means of promoting better risk management.

Workforce health and safety representatives (HSRs) form a second safety-oriented group within the organization that regulators should cultivate. Research shows that HSRs play a significant role in assuring safety (Walters 2004) and it therefore behooves inspectors to do all in their power to enhance HSR credibility within the organization by listening to them, and, where appropriate, championing their concerns.⁹ In addition, inspectors might ask senior managers on-site if they know what their HSRs think about certain issues. Managers who lack this awareness could be chided about the effectiveness of their consultation procedures. HSRs are well positioned to know when things are not as they should be, and consulting them may be an efficient way for inspectors to zero in on things that require their attention.

Modern regulatory regimes are sometimes described as self-regulatory. This is not the place for a debate about the meaning of this term, but one precondition for successful self-regulation is the existence of specialized agents within an organization whose function is to ensure the effective management of risk. Regulators can therefore increase the effectiveness of self-regulation by supporting the company's internal compliance agents.

VI. ADVISING ON ORGANIZATIONAL DESIGN

Various authors have noted that safety management systems have not yielded all the safety benefits that were originally expected, and that too often these systems consist of little more than sets of manuals on shelves (Reason 2000). Something else is needed to breathe life into such systems, and that something else is a safety culture (Hopkins 2005). The Norwegian government has taken the step of requiring petroleum companies to develop a safety culture. It has enacted a regulation which states: "The party responsible shall encourage and promote a sound health, environment and safety culture."¹⁰ The Norwegian Petroleum Safety Authority recognizes that "such a demand has never previously been expressed so directly in either Norwegian or international regulations" and it therefore offers guidance on what it means (PSAN, nd). Its guidance notes draw on the definition of safety culture provided by Reason (1997). There are four elements in this definition: a safety culture is a reporting culture, a just culture, a flexible culture, and a learning culture. These are to some extent self-explanatory, with the exception of the idea of a flexible culture. In Reason's formulation, flexibility is largely to do with how decisions are made. A flexible culture is one in which organizations assemble teams of people best equipped to make relevant decisions, rather than centralizing decision making in one person.

Promoting a flexible culture therefore involves promoting a particular style of decision making.

It is clear, then, that the Norwegian regulation is seeking to have organizations redesign themselves in significant ways. They must develop better mechanisms for detecting and responding to information about things that may be going wrong, or about to go wrong, and they must develop different styles of decision making. These are fundamental features of the way in which an organization operates, which go well beyond health and safety. Perhaps without realizing it, the Norwegian regulators have added a new role to their repertoire, that of advising on organizational design. Research on so-called high-reliability organizations (Weick & Sutcliffe 2001) has shown that safe operation is not just a matter of compliance with various regulations and codes; it is crucially dependent on organizational design. The new role that the Norwegian regulators have created for themselves is consistent with this insight.

The organizational location of safety staff is one aspect of organizational design. In view of the earlier discussion, this is worth addressing here in more detail. The best companies have safety staff at several different points of the hierarchy, with safety officers reporting directly to the most senior manager at that level, not via a human resources manager or some other intermediary (Parker 2002: 189). There are also reporting links between the safety staff at various levels. A simplified version of this situation is represented in Figure 1.

Let us spell out the implications of Figure 1. If the asset A safety manager feels that section managers are not responding to his concerns he can speak directly to the top manager of asset A.¹¹ If the latter does not respond, he can report this to the safety manager one level up, in this case, the corporate safety manager. This is a vital part of the structure, for it means that the

Figure 1. Example of how safety managers are located in best practice companies.

asset manager knows that his superior (the CEO in Figure 1) will be receiving independent reports about safety of his asset. This is an excellent way of ensuring that the senior manager at each level listens attentively to any concerns a safety manager may have. Moreover, in best practice companies, the corporate safety manager visits assets on a regular basis and given that he is on a par with, or even outranks the asset manager, his views carry great weight.

There is a role here for regulators to prod companies that do not have such arrangements to move in this direction. Again, the role is one of advising on organizational design.

VII. EXPOSING PERFORMANCE

Good safety performance depends on the commitment of the top management (Flin 2003). A crucial question from the regulator's point of view is how to motivate top management to make this commitment. One way to do this is to measure and publicize organizational performance with respect to various indicators. Managers are fiercely competitive about their performance, proud of good performance, and embarrassed by poor performance. Such embarrassment leads to a redoubling of efforts to do better (Hopkins 1995: 164). All this is most obvious around performance indicators of production. But it is also evident in relation to certain safety indicators, in particular lost time injury figures. The limitations of the lost time injury frequency rate (LTIFR) as an indicator of safety performance are well known and will not be addressed here (Hopkins 2000). A crucial feature of the LTIFR, however, is that it is a universal indicator that can be calculated across a wide range of establishments. This means that it can be used to make comparisons between sites, companies, and industries. No other safety indicator has such universal relevance. Because it *can* be calculated, it *is*, and when senior managers are compared on this indicator it has the expected effect. Those who do well determine to continue doing well, while those who do poorly are embarrassed into taking action to manage safety more effectively (Hopkins 1995: 164). It is a classic example of the observation that what gets measured, gets managed (Drucker 1955). There are inevitably perverse effects as well. Managers determined to improve their performance figures may resort to managing the measure itself, for example, by finding ways to avoid classifying injuries as LTIs, but there is little doubt that competing to drive LTIFR downwards has a beneficial effect on safety.

Unfortunately, performance in relation to other safety matters, such as the prevention of major accident events, is not so easily measured. Regulators need to find ways of exposing safety performance in these areas to similar competition. In the U.S. nuclear power industry, scrams, that is, emergency shutdowns, are taken as an indicator that the plant was temporarily out of control and thus as an indicator of poor performance. Comparative data

on scrams are assembled and publicized (Rees 1994), and managers are thus highly motivated to manage these issues more effectively. In the oil and gas industry, leaks are an indication of poor safety performance, and where data on leaks can be assembled and publicized, managers will be highly motivated to do better. The challenge for regulators, therefore, is to find ways in which relevant data can be assembled and publicized, and poor performers shamed into doing better. It should be noted that quantitative data are not essential for mobilizing shame. Publicizing the details of a single accident can impact on reputation and motivate better performance.

It is interesting to consider for a moment the behavior of companies that operate both in impoverished states, where effective regulatory oversight may be lacking, and in wealthy states, which have a more developed regulatory apparatus. The prominence of the LTI measure means that sites within the same company compete with each other to minimize this figure, regardless of differences in the effectiveness of regulatory regimes, and the results from sites in developing countries are sometimes even better than the corresponding results from developed nations.¹² Such results invite skepticism and views are divided on whether they can be taken at face value.¹³ Nevertheless, there is an important implication here. If global companies can be induced to compete internally and externally on the basis of various indicators (in addition to LTIs), for example, in the oil and gas industry, number of leaks, then various aspects of safety management can be expected to improve independently of the activities of regulators. It follows that one way in which regulators in the developed world can most effectively assist their colleagues in the developing world is to promote intra- and inter-company competition in relation to such indicators.

VIII. PROMOTING REGULATORY CRISIS

The motivations of top managers to comply with regulatory requirements are mixed. The evidence is, however, that the major motivations are fear of the regulatory and public relations consequences of noncompliance, rather than any disinterested altruism (Parker 2002: 93). There is of course an intimate relationship between public opinion and enforcement in motivating compliance. Legal action against a company damages its reputation and it is often this, rather than the strictly legal consequences, that provides the real motivation. In turn, poor reputation can fuel public demand for tougher enforcement (Gunningham, Kagan & Thornton 2005).

Moreover, the most common reason that companies set about improving regulatory compliance is the experience of a regulatory crisis or disaster (Parker 2002: 91, 95). In some cases it is difficult to disentangle the effects the regulatory response to an incident, from the effects of the incident itself. For example, a massive fire will generate bad publicity and impact on a company's reputation independently of the regulatory response. But even in

these circumstances, the regulatory response can intensify the impact on the company and strengthen its motivation to avoid further incidents. Moreover, a conviction for a regulatory violation is of enormous assistance to those wishing to sue the company for damages, and such civil actions may substantially escalate the crisis for the company (Hopkins 2002).

All this suggests a role for the inspectorate in creating regulatory crises for companies. As noted above, regulatory action following a major accident can be expected to intensify the crisis for the company in various ways. However, even in the absence of a major accident, there are ways in which regulators can promote a regulatory crisis for organizations that do not appear to be sufficiently focused on safety. Such organizations may from time to time experience dangerous incidents that, in and of themselves, generate little or no publicity, and certainly no crisis for the organization. If the incident is a result of some flagrant safety violation, the regulator is in a good position to generate a mini-crisis for the organization by prosecuting it and exposing it to negative publicity. Similarly, if regulators issue improvement or prohibition notices they should publicize this action so as to gain maximum leverage. The failure to publicize regulatory action seriously undermines the potential impact of the action.

Regulators may need to be strategic about creating organizational crises. They may even need to orchestrate a public response in some way, for example, by providing press releases. The aim must be to generate the crisis for the organization that research shows is often necessary to stimulate real change.

Routinely prosecuting the same organization in circumstances where minimal fines are being imposed will not generate the necessary organizational crisis. Indeed, the fines in these circumstances may be seen as no more than the cost of doing business. One very large company in Australia was prosecuted dozens of times in the 1970s and 1980s for industrial safety violations, with no apparent effect. The company generally pleaded guilty, which avoided any need for its senior people to appear in court, and I was told by a company spokesman that it did not regard these prosecutions as "pivotal events." The regulator in this case had no concept of creating a crisis for the company; indeed it continued to allow the company to carry its own workers' compensation insurance, a privilege available to large companies in Australia that are able to demonstrate good safety management! (Hopkins 1995: 101).

The role of personal liability deserves special mention here. There is plenty of anecdotal evidence that when senior executives realize that they might be personally liable if something goes wrong they devote far more effort to ensuring compliance (Parker 2002: 93). Evidence of another kind concerns the differing corporate responses to environmental and OHS offenses in Australia. For decades now, directors have been exposed to personal liability under environmental statutes and company lawyers have been warning them of their exposure. There has been no similar exposure under OHS law until more recent times. Correspondingly, the evidence is that directors have been far more concerned about their environmental

responsibilities than about their responsibilities under OHS law (Hopkins 1995: 105).¹⁴

Criminology makes a distinction between specific deterrence, the impact on the individual punished, and general deterrence, the crime prevention effect on other potential offenders. In the OHS context the evidence is that targeting corporations can have a deterrent effect on the companies prosecuted, by creating a crisis to which they must respond, but there is little evidence of an effect on other companies (Johnstone 2004). In contrast, the threat of personal liability seems to work as a general deterrent in that it has an observable impact on individuals who have not themselves been prosecuted.

The issue of personal liability of senior officers is a contentious one and those prosecuted may feel quite aggrieved that they should be held personally responsible for events that occurred far away, and about which they had no direct knowledge.¹⁵ If the law is regarded purely as an instrument of retribution, that is, as a means of allocating just deserts, then this sentiment is understandable. But if the law is seen as having a preventive function, then holding senior officers liable appears far more justifiable—the evidence is that it works! There is, of course, a moral issue here: is it appropriate to punish people for the purpose of having an impact on others? This is not the place to canvas this issue; suffice it to say that the law has traditionally answered this question affirmatively. Industry leaders sometimes claim that personal liability will lead to an exodus of good people from industry, but there does not seem to be any evidence that this has occurred.

Prosecuting the most senior officers of a very large company is one way regulators can broaden the crisis for the organization. If the site at which the offense took place is organizationally and geographically remote from corporate headquarters, the personal impact of prosecuting the company or one of its subsidiaries may be minimal. But when senior officers are prosecuted, the ripples spread quickly throughout the whole company and even throughout the industry. This has been the experience in relation to the prosecutions of mine officials following the Gretley coal mine disaster in NSW. Managers at all levels in the company that owns the mine are now much more aware of their personal duty of care.¹⁶

There is one additional matter that regulators need to bear in mind in resorting to personal liability. The greatest leverage is obtained by targeting officers at the top of the company, people who are making major spending decisions and who are in a strong position to influence outcomes. Prosecuting at lower levels simply looks like scapegoating.

The preceding analysis has been deliberately couched in terms of promoting *crisis*, rather than enforcing compliance, because there is no direct connection between crisis and compliance.¹⁷ Regulatory crises do not automatically lead to improved health and safety outcomes. The point is that a regulatory crisis for an organization represents a window of opportunity during which the company will be susceptible to change. It is an opportunity, in particular,

for company safety staff, who may have been battling against commercial pressures, to bring about the changes they have been seeking. It is also an opportunity for inspectors to promote organizational and other changes they see as needed. From this point of view, promoting regulatory crisis is a tool available to regulators seeking to kick-start companies on the road to change.

IX. RESOURCE IMPLICATIONS

The regulatory strategies outlined here place great demands on the personnel of the regulatory agency. The traditional inspector of the past focused very much on compliance with detailed prescriptive requirements (Gunningham 2005). The role envisaged here goes way beyond that to issues of company management. Inspectors must be able to talk to senior managers about such matters. This requires inspectors who are far better educated than those of the past. Such people are also highly sought by industry, and regulatory agencies wishing to attract them will need to pay competitive salaries. The financial costs of moving beyond compliance monitoring will therefore be considerable.

Most safety regulators will find it difficult to access the necessary resources. However, in high risk industries where catastrophic events occur, even if only rarely, the public demand for better regulation when such things happen may provide the opportunity for regulatory agencies to acquire the resources necessary to implement these strategies.

X. CONCLUSION

Although the advent of general duty legislation makes the task of the regulator far less clear-cut, inspectorates are still involved in monitoring and, to some extent, enforcing compliance with rules of various sorts. Monitoring compliance in this way is crucially important, but this article seeks to identify strategies that go beyond compliance monitoring, by drawing on research on the causes of accidents and the nature of organizations. The strategies identified include: auditing the auditors; proactive investigation; supporting company safety staff; advising on organizational design; exposing performance; and promoting regulatory crisis. These are all ways that regulators can encourage companies to improve their management of risk; ways that are not focused on identifying noncompliance with rules of any sort. It is in this sense that we can speak of going beyond compliance monitoring.

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NOTES

1. In some circumstances, duty of care legislation or regulations made under it may include performance standards which specify precise targets to meet (e.g., noise levels) (Bluff & Gunningham 2004). The idea of “going beyond *compliance*” takes on a particular meaning in this context, namely, achieving a performance better than that required by the standard (Gunningham, Kagan & Thornton 2004). The present article is concerned with going beyond compliance *monitoring*.
2. By way of example, the NSW Occupational Health and Safety Act states that an inspector may issue a prohibition notice if s/he reasonably believes that there is an “immediate risk to the health and safety of a person” (§112). An improvement notice can be issued if an inspector reasonably believes that a person “is contravening a provision” of the Act. This “of course” raises the question of what constitutes a contravention, which, as I am arguing, is frequently unclear in duty care legislation.
3. For example, see section 49 of the Australian Petroleum (Submerged Lands) (Management of Safety on Offshore Facilities) Regulations 1996.
4. The Australian National Offshore Petroleum Safety Authority states in its strategic plan that safety cases will be checked to ensure that they are consistent with “good oil field practice” (n.d.: 6).
5. For a discussion of the failures of auditing in general, not just safety auditing, see Power (1994).
6. The Swiss cheese model developed by Reason (1997) and the accimap developed by Rasmussen (1997) provide two examples of how such investigations can be formalized. See also Hopkins (2000).
7. Inspectors in safety case regimes whom I have interviewed describe carrying out these kinds of inquiries.
8. This point was made to me by an experienced inspector.
9. Where regulators fail to do this, HSRs feel belittled and disempowered (Gunningham 2005).
10. Regulation available at: http://www.npd.no/regelverk/r2002/Rammeforskriften_e.htm#_Toc6177570.
11. I use male pronouns here to avoid linguistic clumsiness. It has to be said, though, that the great majority of people I have met in these positions are men.
12. This is evident in internal BHPBilliton documents I have seen.
13. On a visit to a petroleum production site in Papua New Guinea I was struck by the efforts to drive the LTI rate to zero, despite the absence of any regulatory pressure to do so.
14. An engineer who worked for an oil company in the 1980s reports, in a personal communication, that her superiors at the time expressed considerable concern about personal liability under environmental legislation, but not about liability under OHS legislation. For more detailed discussion see Gunningham and Johnstone (1999: 215ff).
15. For example, see *McMartin v Newcastle Wallsend Coal Company and others* [2005] NSWIRComm 31 (11 March 2005).
16. This observation is based on my own field work in the company concerned.
17. I owe this important insight to Parker (2002: 99).

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