Provision of public assurance that major hazards are properly controlled - HSE's role

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Provision of public assurance that major hazards are properly controlled - HSE's role

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This report presents the findings from a study on public perceptions of the regulatory systems required to manage health and safety in major hazard sectors. The work is based on 12 reconvened focus groups in six locations around the UK which took place between December 2004 and February 2005. The second sessions involved HSE representatives from four major hazard sectors. Using a multi-criteria analysis approach, participants scored the relative importance of the elements of a regulatory system, which had been distilled from the first set of discussions, for each of four major hazard sectors.

There is one fundamental underlying principle for a major hazards health and safety regime in the UK, namely that the operators should act responsibly. The inspection/oversight regime should therefore be designed to ensure that operators are acting responsibly. The three key elements of a regulatory regime were:

• external checks of health and safety systems;

• expert inspectors; and

• identified health and safety staff within the operators.

At a secondary level, the regime must include: external checks on buildings, that drills are taking place and that training is being provided; external monitoring of emissions; independent inspectors; and prior permission to operate from HSE. In summary, we could deduce the following system would meet with general approval:

• inspection of systems and procedures by independent and technically expert people;

• physical inspections by independent and technically expert people;

• a range of inspection options, including unannounced spot checks, planned inspections of particular features and general inspections of culture and practice;

• frequent inspections, with regularity reflecting both potential hazards, perceived risk of the operator, as well as of the sector; and

• appropriate sanctions for operators failing to comply with set standards.

The overall conclusion by participants was that HSE is performing a crucial role and doing it well. Participants felt confident in the existing approaches that were explained to them. They were generally keen to stress that these systems should remain in place as they had been successful in providing safety to date.

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EXECUTIVE SUMMARY

INTRODUCTION

This report presents the findings from a study on public perceptions of the regulatory systems required to manage health and safety in major hazard sectors. The Health and Safety Executive (HSE) commissioned People Science & Policy Ltd to undertake the project in October 2004. Fieldwork was undertaken during the period November 2004 to February 2005.

AIM

The overall aim of this study was to explore whether or not there are general principles that the public identifies in determining the level of scrutiny required on major hazard sites to provide assurance that the potential risks and hazards are under adequate control. Such control may be through regulation and external inspection, good practice guidance and internal management practices, or some combination of the two.

METHODOLOGY

The work is based on 12 reconvened focus groups in six locations around the UK which took place between December 2004 and February 2005. The second sessions involved HSE representatives from four major hazard sectors. Using a multi-criteria analysis approach, participants scored the relative importance of the elements of a regulatory system, which PSP had distilled from the first set of discussions, for each of four major hazard sectors.

During the first sessions we explored what participants knew about the four major hazard sectors and the safety regimes, which was very little. We also worked with participants to identify the elements of a safety regime that they would expect to be in place for these sectors. The second sessions were built around these elements and the descriptions of the regimes presented by HSE representatives. Information on current practices from HSE representatives may have removed debate on some issues, notably where participants agreed with current practices or felt practices addressed their concerns. However, where participants had strong views that did not accord with current practice, participants challenged HSE staff. On these topics, while views may have been tempered, overall perspectives remained unchanged. There was a high level of consistency between views expressed orally in the two sessions and the results of the written multi-criteria analysis participants completed.

PUBLIC PERCEPTIONS OF MAJOR HAZARDS

Participants used the words ‘safe’ and ‘dangerous’ to represent the interaction between risks and hazards. Some emphasise the risk, others the hazard and in trying to decide whether a sector is ‘safe’ or ‘dangerous’ participants were weighing up the risk against the hazard.

This trade-off is at its most extreme with the nuclear sector, where views are most polarised, with those who emphasise risk saying the sector is very safe and those who emphasise hazard that it is very dangerous. However, this variation in views can be identified in all the sectors.

Defining major hazards

In contrast to the HSE definition of a major hazard sector as one where there are highly complex safety systems and relatively mature approaches to safety, the participants defined a major hazard sector as one with simplistic safety systems and immature approaches to safety. They agreed however, on the potential for incidents that are entirely unacceptable to society.

The nuclear industry

Nuclear is feared because it is unknown and intangible, even by those who think it is low risk and ‘safe’.

The chemical industry
The chemical sector is more diverse and in some senses more difficult for participants to pin down.

The gas supply system
The gas supply system is not seen as hazardous and while there is a perception that incidents occur regularly, participants believed these are dealt with effectively. This sector was generally seen to be the 'safest' and demonstrates that effective procedures operating well, is important in people's overall perceptions.

The offshore industry
The offshore industry is known to be 'dangerous' because working in it is seen as demanding and everyone believed that rig workers are well paid because it is dangerous.

TOWARDS A REGULATORY REGIME
During the first sessions we identified the elements of a health and safety regime that participants wanted to see. In no particular order, the ideal regulatory regime would encompass the following features:

- Named staff working for the operator who are responsible for the safety systems
- Checks by a person external to the operator that the safety systems are in place
- Checks by a person external to the operator of the machinery and buildings
- Monitoring by a person external to the operator of emissions (air, land and water)
- Checks by a person external to the operator that drills take place
- If an operator has a good track record there should be fewer external checks
- Reports on incidents that have occurred should be publicly accessible and highlight the lessons learned to prevent the same incident occurring again
- Inspectors must be technically expert in the field
- Inspectors must be independent
- Operators must have prior permission to operate
- Operators should pay to be inspected
- Inspectors should not be known to the operator
- Public sector inspectors
- Inspections should be unannounced
- Inspections should cover the whole plant/operation
- There should be regard for both employee and public safety

Sectoral differences
A common *framework* would be broadly acceptable but participants recognised that the *implementation* would be different in each regime and may also vary between different operators in the same sector, depending on performance. Participants wanted to see poor performers inspected more often but were generally reluctant to accept that good performers should be inspected less often.

UNDERLYING PRINCIPLES
There is one fundamental underlying principle for a major hazards health and safety regime in the UK, namely that the operators should act responsibly. The inspection/oversight regime should therefore be designed to ensure that operators are acting responsibly.

Responsible operators

It was recognised that it is not possible, nor necessarily desirable, for inspectors to be on operator sites continually. The regulatory regime must therefore ensure that operators are complying with health and safety at all times – that is, that they are acting responsibly. Some participants believed that inevitable commercial pressure would lead them to reduce precautions to minimum levels, while others hoped that operators in these sectors would be aware of the potential hazards and act accordingly. Participants both hoped and assumed that the rigour of the health and safety regime is related to the scale of the risk and the hazard the sector poses.

Key elements of a regulatory regime

The three key elements of a regulatory regime were:

- external checks of health and safety systems;
- expert inspectors; and
- identified health and safety staff within the operators.

At the second level, the regime must include:

- external checks on buildings, that drills are taking place and that training is being provided;
- external monitoring of emissions;
- independent inspectors; and
- prior permission to operate from HSE.

The order of importance of these elements varied for different individuals but the ability to conduct 'spot checks' that enabled inspectors to see operators as they are day-to-day, not just when they are prepared for an inspection, is important. The nature of the enforcement regime is not as confrontational as participants expected but they expect inspectors to remain detached.

Less important to participants was that reports on incidents should be publicly available or whether companies should pay for their inspections. Taken as a group, participants were not in favour of companies with a good track record being inspected less often, although they did want those that perform badly inspected more often.

In summary, we could deduce the following system would meet with general approval:

- inspection of systems and procedures by independent and technically expert people;
- physical inspections by independent and technically expert people;
- a range of inspection options, including unannounced spot checks, planned inspections of particular features and general inspections of culture and practice;
- frequent inspections, with regularity reflecting both potential hazards and perceived risk of the operator, as well as of the sector; and
- appropriate sanctions for operators failing to comply with set standards.

The system should be run and overseen by the public sector but subcontracting individual tasks (rather than whole inspections) to the private sector is acceptable where specific technical expertise or capacity is needed.

There is a remarkable consistency in the pattern of the findings, although we need to be careful in the interpretation as the sample was not selected to be statistically representative and the sample size is very small. Nevertheless, putting together the scoring, ranking and qualitative

data, the consistency enables us to be confident in our finding that both the absolute and relative importance of the different elements is remarkably consistent between different age, gender and socio-economic groups.

HSE's Role

During the discussions we encountered scepticism about the role of government and some concerns about the expertise available to the HSE. However, the overall conclusion by participants was that HSE is performing a crucial role and doing it well.

Maintaining capacity

Participants felt confident in the existing approaches that were explained to them. They were generally keen to stress that these systems should remain in place as they had been successful in providing safety to date.

Future developments

After the interaction with the HSE representatives, building relationships with operators emerged as a way by which improvement might be maintained and standards continually raised. This was not an approach that had generally occurred to people in the first sessions, where they had seen a more confrontational approach between the enforcer and the operator. However, the caveat to this is that the HSE must ultimately maintain its position of authority and independence.

Sanctions

It was generally felt that existing sanctions were too lenient, with fines being perceived as small relative to the financial scale of the operation. There was an assumption that fines went to HSE and when the system was explained, some participants felt that fines should go directly to HSE to support their work. It emerged in the public protection research in which some participants had already participated, that some were unclear as to what 'prosecution' actually meant.

Closure was the ultimate sanction participants wanted to see but they were sceptical that this would be used and were surprised to hear that it had been used.

Budgets and resources

In the first sessions we attempted to address relative resourcing issues between major hazards and other HSE budgets but we found that participants wanted much more information about the other areas of HSE's work before they would comment. It would have been complex and diverted us from the main aims of the study to have provided this. With respect to the balance of the budget between the major hazard areas, priorities reflect perceptions of danger but in these types of studies people tend to want more inspection.

Conclusions

The key to a system that will have the confidence of the public is one that ensures that operators are working responsibly. While participants, especially those in more managerial positions accepted that some of this could be done through desk-based assessments of systems and records, there remained a strong emphasis on the need for physical checks to be conducted by independent inspectors who are technical experts in the sector.

1 INTRODUCTION

The Health and Safety Executive (HSE) commissioned People Science & Policy Ltd (PSP) in October 2004 to explore public views on how industrial sectors that present major hazards to the public, as well as to workers, are regulated and monitored to ensure that these hazards are managed and contained. This is the final report from the study.

1.1 AIM

The overall aim of this study was to explore whether or not there are general principles that the public identifies in determining the level of scrutiny required on major hazard sites to provide assurance that the potential risks and hazards are under adequate control. Such control may be through regulation and external inspection, good practice guidance and internal management practices, or some combination of the two.

We explored attitudes to different types of hazards and probed for underpinning values and how these might affect general principles associated with the management and control of major hazards.

1.2 METHODOLOGY

The work is based on 12 reconvened focus groups in six locations around the UK which took place between December 2004 and February 2005. In each location a group of men and a group of women were recruited and initially convened for about 1½ hours. In these first sessions we focused on exploring public perceptions of the risks and hazards of four sectors regarded as major hazards by HSE: chemical sites that fall within COMAH regulations but excluding biotechnology areas; nuclear sites; offshore oil and gas rigs; and the gas supply system. We also explored the elements that a system designed to regulate these sectors would require. Half of the groups had already met once to discuss public protection issues with a representative of HSE, facilitated by PSP.

The second sessions brought together the two groups in each location for three hours to discuss the regulatory systems in more depth. HSE representatives familiar with each area provided more information on how the regulatory system is implemented in each sector. Using a multi-criteria analysis approach, participants scored the relative importance of the elements of a regulatory system that PSP distilled from the first set of discussions for each of the four sectors. The participants compared their scores and discussed with each other and HSE representatives the underlying rationales behind their scores. It must be acknowledged that the information provided and how it was provided will have coloured the views of participants. However, the results of the scoring exercises and our observations of the discussions between the lay participants and the HSE representatives reveal that participants were not intimidated or swayed in their views without good reason. In the discursive elements participants were encouraged to articulate what they understood by commonly used words and phrases such as ‘independent’, ‘regular’ and ‘public sector’.

1.3 THIS REPORT

This report sets out both the core principles that we have identified and the measures or activities through which participants expect such principles to be enacted. This is set within the context of people’s wider perspectives of health and safety and we have also highlighted potential constraints for the HSE and HSC.

The following chapter focuses on participants’ initial views of the four major hazard sectors.

Chapter 3 presents participants' views of the elements required to comprise a regulatory regime in which they would have confidence. Chapter 4 distils the elements described in chapter 3 into core principles and sets out our overall conclusions. Copies of the recruitment questionnaires, the topic guides and the scoring sheets are presented in the appendices.

In the first sessions we attempted to address relative resourcing issues between major hazards and other HSE budgets but we found that participants wanted much more information about the other areas of HSE's work before they would comment. It would have been complex and diverted us from the main aims of the study to have provided this. With respect to the balance of the budget between the major hazard areas, priorities reflect perceptions of danger but in these types of studies people tend to want more inspection.

2 PUBLIC PERCEPTIONS OF MAJOR HAZARDS

2.1 INTRODUCTION

This section sets out the views of the participants on the four major hazard sectors on which this project focused.

2.2 MAJOR HAZARDS

2.2.1 Defining major hazards

HSE defines a major hazard industry as one that has:

1. highly complex safety systems;
2. the potential for incidents that would be entirely unacceptable to society; and
3. relatively mature approaches to safety.

This definition caused problems for a number of participants; the second feature was widely accepted as being the central defining factor of a major hazard. However, participants were more concerned about sectors with simplistic safety systems and immature approaches to safety. It was felt that there was more potential for accidents if safety systems are immature. In particular however, people raised the issue of emerging technologies that had the capacity to cause great harm but where safety approaches were either not yet developed or hazards, especially long-term hazards, were not clearly identified.

In the first rounds of discussions, we asked participants for their definition of a major hazard and it seems that they would define a major hazard as *"anything that can't be controlled"* or

> *"I would say a major hazard is somewhere a large area, a large number of people could be affected in one go."*
> Man, C2DE, South-East

In terms of industrial sectors, a major hazard sector was thought to be one where the risk of an incident occurring can be high or low but where the effects of an incident would be widespread and devastating for workers, the public and/or the environment (especially if the impact is long term). It could also be one with a track record of high rates of death or injury to workers or the public.

Some questions were raised about the focus on major hazard regimes described by the HSE representatives, on which the project focused, namely:

- the chemical industry;
- the nuclear industry;
- the gas supply system; and
- offshore oil and gas rigs.

when it was felt that far more people are killed at work in the construction and agricultural sectors. In some locations, especially during the re-convened sessions, participants started to differentiate between sectors that have poor track records (such as construction and agriculture), but where relatively simple actions will improve local safety, and the major hazard sectors.

The feature of the major hazards is their scope for widespread impacts on both workers and public, where simple safety measures are not adequate to ensure the levels of control required.

"When you're talking about oil rigs and nuclear power plants…whether they've got their hat on and that, that ain't going to kill anyone else, is it? It's whether they're doing the important things."
Man, C2DE, South-West

2.2.2 Danger associated with major hazards

In the initial sessions, we tried to get an overall ranking of how 'safe' or 'dangerous' participants perceived each of the four sectors to be, both in absolute and relative terms. Participants were asked to score each sector on a scale of one to ten, to give an absolute score of how safe they perceived the sector to be and why they felt this. By asking them to rank the four sectors in terms of how safe or dangerous they perceived them to be, we were able to explore the perceived relative safety of the sectors. The findings in the following sections show that there was no overall agreement, although some common themes emerged. In particular, one participant summed up a general mood thus:

"I think they are all dangerous in their own right, if they aren't controlled and contained."
Man, C2D, Midlands

When making initial assessments of the risks and hazards to workers and the public, participants took into account how the accident records of these sectors compared, not only with each other, but also with other heavy industries in the UK. The construction industry and to a lesser extent the agricultural sector, were the main benchmarks against which participants assessed the information PSP imparted about the four major hazard sectors. For example, a typical reaction to information about accidents in the gas supply system sector was:

"That's pretty good rates really."
"Yeah, when compared to the construction industry."
Men, C2DE, South-West

However, although participants saw construction as a 'dangerous' occupation and initially included it in a list of major hazards, after consideration it was not generally ranked as a major hazard because:

"It's [construction] *not a major hazard, its not going to affect a lot of people"*
Man, C2DE, South-East

This summed up the internal tensions that underpinned discussions in many groups. The major hazard sectors were recognised as different because of their potential to cause harm, yet against a background of relatively few major incidents the most tangible way that people could assess their 'safety' was through what might be termed traditional health and safety performance.

2.3 PERCEPTIONS OF THE FOUR SECTORS

During the initial focus groups, participants explored in some depth their perceptions of each of the four major hazard sectors in question. At the start of this consultation process participants confessed to fear and ignorance of the sectors and acknowledged that some of their fear was triggered by their ignorance. Nevertheless, it became clear that control over sites in these sectors is very important to these lay people.

"That's quite scary, I really didn't think it was that much…thought it would be about two" [with reference to the number of nuclear sites in Britain].
Woman, ABC1, South-East

"I suppose without knowing how it [a nuclear power station] *works it's hard to put a risk factor to it. I don't really know, how does it work?"*
Man, ABC1, North

"I wouldn't say they are all equally safe but all equally a risk."
Man, C2DE, South-East

For some participants the lack of major incidents in Britain led to a belief that despite the hazards, the sectors were being adequately controlled.

"*Potentially they* [the four major hazard sectors] *are dangerous but I don't think they are dangerous. I think they are well monitored, I hope they are well monitored!"*
Man, BC1, Wales

2.3.1 The nuclear industry

It should be noted that the final three re-convened sessions were held within a week of press coverage of Sellafield's 'lost 30kg of plutonium'. Although this was raised briefly by a few people it did not seem to greatly influence discussions, once the nature of the 'missing' material had been explained by the HSE representatives.

There is some indication that many people assume the British nuclear sector to be very small, with perhaps only three or four sites in the UK. There was a good deal of obvious surprise when the number of sites falling under the nuclear licensing regime was set out. While this is not a quantitative study and so we cannot scale-up from these results, we feel that the large proportion of participants who had assumed this is worth highlighting.

Participants were all aware of the potentially very long term impact of a nuclear incident.

"An explosion covers a vast area; it kills things for years and years."
Woman, C2DE, North

"If things did go wrong [with nuclear] *they would go wrong in quite a major way."*
Man, BC1, North

Fear of the unknown, particularly in terms of what nuclear fallout might 'look' like, is an important factor in the image of nuclear for participants.

"Probably nuclear power is the most dangerous because you can't see it.'
Man, C2DE, South-East

Ignorance also appears to fuel fear of the sector.

"*How could you say if you don't have the information, you could say 10* [very dangerous] *because you are really frightened, couldn't you, but if you had the information it might not be as high."*
Woman, C2DE, North

Nuclear power is closely associated with armaments and national security in the minds of participants. Some believed that national security interests would mean that not everything would be reported or that inspection might not always be possible.

"You can't just turn up at a nuclear site because the government will say you aren't going in there, because they have nuclear rockets ready to go."
Man, C2DE, South-East

For others secrecy was not a problem.

"I don't think that they could keep it hush-hush."
Woman, BC1, South West

There was a divide on the perception of how safe the nuclear industry was believed to be. Some participants thought that the nuclear industry was very safe because there have not been any major accidents in the UK, and because it is well regulated. There was also the assumption that because it is potentially highly dangerous (high hazard) it must currently be well regulated.

"The nuclear power, that might be the safest because they have more to think about."
Man, C2DE, South-East

"Nuclear is high hazard, low risk because of the control."
Man, BC1, Scotland

Others said that it is very dangerous because if there were to be an accident the impact would be extremely severe. So this sector tended to be scored at the extremes and be rated either as the most dangerous or as the safest of the four sectors, both relatively when ranked against the other three sectors and absolutely, when scored on a scale of one to ten by participants.

Generally, however, the majority of participants rated the nuclear sector as the most 'dangerous'.

2.3.2 The chemical industry

It should be noted that the first six sessions took place between 2 and 8 December 2004. This was the twentieth anniversary of the Bhopal accident at a chemical plant in India. There were several television and radio programmes over the period of a week that explored different issues about the accident, its cause and the short and long term impact on the local community and the company concerned. Some, but not all, participants were aware of this.

Perceptions of the chemical industry were very mixed. None of the participants wanted to live near a plant, although some did, or had done so in the past.

"I wouldn't want to live near one, wouldn't want my kids near one or my family living near one."
Woman, BC1, South-East

Indeed, all participants were concerned about the risk to health of living near to a chemical plant and several people mentioned clusters of cancer patients. However, as with nuclear, it was the potential long term impact that caused most concern:

"You don't really know I think, because you don't know the long term effects from exposure to these chemicals."
Man, ABC1, North

On the other hand, in response to information about the COMAH regulations:

"We don't hear of that many instances on the news so something is working."
Man, BC1, Wales

Despite this, some of participants thought there was a potential for serious accidents and Flixborough was mentioned as well as Bhopal. In some locations there were also brief mentions of local incidents of varying severity. The dangers of transporting and dumping chemicals, both legally in landfill sites and illegally were also raised.

Views on the overall safety of this sector were less polarised than with the nuclear sector and participants were aware that the sector is quite diverse and therefore found it difficult to come to a view on the sector as a whole. Nevertheless, participants tended to rank it as one of the more dangerous sectors; this was particularly the case in groups where there had been a discussion of longer-term impacts of exposure to chemicals on either workers or the public.

2.3.3 The gas supply system

All the participants were aware that gas pipelines run everywhere but on the whole they thought that the network was very safe, although a few thought that there was the potential for danger. Some participants were concerned about gas explosions in homes and other premises, but none had heard of a major incident to do with the gas supply, either in the UK or elsewhere.

"I'm really struggling to think of a large accident that involves the gas network."
Woman, ABC1, South West

This reaction also provides an insight into how this participant viewed 'danger'. For this woman the sector was 'safe' because she was not aware of an incident – it was therefore low risk. However, the hazard was also thought to be low on the whole, with the main danger perceived to be workmen drilling through pipes when digging-up roads. However, the general view was that this type of incident is frequent but well managed because the 'gas board' responds quickly to incidents once they are reported.

There was also something of the idea that 'familiarity breads contempt' in the arguments we heard. For example:

"I think with gas, you don't worry about it because you have grown up with it, you're used to it and you use it all the time."
Woman, C2DE, North

This means that participants tended to rate this sector as fairly safe in terms of absolute danger. In relative terms, when considering the degree of risk to the public, this sector was ranked as either the lowest or second lowest.

In the re-convened sessions, the relevant HSE staff set out in more detail the potential hazards associated with incorrect gas supply such as explosions if gas pressure drops or production of excess carbon monoxide through incomplete combustion. While these examples provoked some discussion, the general response was that historical precedent suggested that the danger associated with gas was largely associated with domestic appliances rather than the supply system. However, some participants did start to think about the potential implications of major incidents in this sector.

"Gas pipelines are running around us all the time. If one of those exploded it would be quite horrendous."
Woman, BC1, Midlands

2.3.4 The offshore oil and gas rig industry

The risk to the general public was thought to be very low, although there was some awareness that the wider public might feel the impact of any pollution resulting from a major accident.

> *"Offshore oil will obviously affect the sea and the wildlife…"*
> Man, ABC1, North

There was also recognition that this is an industrial sector that is not at the forefront of people's day-to-day concerns.

> *"Offshore is out of sight, out of mind"*
> Man, C2D, Midlands

Of greater concern to participants was the acknowledgement that working offshore is highly dangerous for the workers,

> *"Every aspect seems dangerous to me, getting there, the work you do, potential for explosions, weather."*
> Woman, ABC1, South West

although participants were aware that the industry recognises this danger by paying well.

> *"It's an incredibly well paid job because it's so dangerous."*
> Man, BC1, Wales

The anti-social nature of the industry was also, some said, a factor in the wage rates.

This sector was rated very low in terms of danger to the public, both relatively and absolutely.

> *"It's an awful thing to say, but it's only the people that work there. With the other sites there's going to be air pollution and other pollution, you could go into thousands of people."*
> Woman, ABC1, South West

2.4 INFORMATION

We gave participants some information about recent health and safety incidents and track records in all four sectors to give them an idea of the types of incidents that can, and have, occurred. The reaction to this information is interesting in that it is polarised. Some participants were reassured that the incidents appeared to be fairly minor and contained, while others were concerned that they had not been aware of the incident. This latter group asked themselves what else they were unaware of and therefore questioned whether the sector was less safe than they had imagined.

> *"We haven't read about that, so what else haven't we read about?"*
> Woman, C2DE, North

2.5 CONCLUSIONS

Participants used the words 'safe' and 'dangerous' to represent the interaction between risks and hazards. Some emphasised the risk, others the hazard and in trying to decide whether a sector is 'safe' or 'dangerous' participants were weighing up the risk against the hazard, as this quote from a discussion about the nuclear sector illustrates:

"The potential for major disaster is probably great but it's very rare."
Man, BC1, North

This trade-off is at its most extreme with the nuclear sector, where views are most polarised, with those who emphasise risk saying the sector is very safe and those who emphasise hazard that it is very dangerous. However, this variation in views can be identified in all the sectors.

Image of the sector is important. Nuclear is feared not only because Chernobyl provides evidence of the major impacts of an incident, but because it is unknown and intangible. The fear extends to those who think it is low risk in this country and thus 'safe'. The chemical sector is more diverse and in some senses more difficult for participants to pin down, although it was generally ranked as one of the more 'dangerous' sectors. The offshore industry is known to be 'dangerous' because working in it is seen as demanding and everyone believed that rig workers are well paid because it is dangerous. The gas supply network is not seen as hazardous and while there is a perception that incidents occur regularly, participants believe these are dealt with effectively. This sector was generally seen to be the 'safest' and demonstrates that effective procedures operating well, are important in people's overall perceptions.

Hence we can conceptualise a hierarchy as follows:

MOST FEARED

Nuclear DISTANT, INVISIBLE, CONCENTRATED, CATACLYSMIC
Stirs up high anxiety - War, Hiroshima, Chernobyl etc

Chemical TOXIC, DIVERSE, HIDDEN, DISTANT
Long term effects e.g. cancer, pollution, dumping/Only a problem if near me

Off Shore DISTANT, CONTAINED
Long term effects

Gas Supply FAMILIAR, DOMESTIC, UBIQUITOUS
Localised effects

LEAST FEARED

3 TOWARDS A REGULATORY REGIME

3.1 INTRODUCTION

In the first sessions we asked participants to describe their ideal regulatory system. From this we distilled a list of elements that participants, taken as a whole, felt should form part of a regulatory system. In the second sessions we asked participants to rate the relative importance of these elements and to explain their thinking. This process has enabled us to explore the values that lie behind the health and safety strategies participants believe to be desirable.

The involvement of HSE representatives in the second sessions moved this project from being a research project aiming to establish public views, to a consultation that allowed participants to consider and question some elements of current HSE practices. While some participants deferred to the obvious knowledge, status and experience of the HSE representatives, generally participants were not intimidated. In some cases HSE explanations of current practice satisfied participants and further discussion on some topics did not develop as a result. The discussions with HSE representatives did change the opinions of some participants on some issues, but only at the margins. On the whole views were tempered rather than changed.

It is important to distinguish between two main aspects of the regulatory system – the overall structure or framework and the way in which it is implemented. The lay participants tended to view implementation details as being part of an overall framework. For example, the participants viewed *regular inspections* as a part of the framework, whereas the HSE participants tended to view the *regularity of inspections* as a part of implementation.

3.2 THE CONSENSUS

There was widespread recognition that ultimately safe sites depended upon the operator having sound systems and processes, including internal checks on features such as training and emergency drills as well as on equipment. However, most participants believed that however well intentioned or able the management and staff within the operator, there would still be a need for external checks. There were different rationales offered for external checks. Some felt that an outside eye could spot potential risks that might be overlooked by someone who sees the same things every day, others took the view that operators would tend to work to minimum standards to save money, whereas external inspectors would be looking for higher standards.

Taking the comments of all the participants together, a consensus view of a regulatory system would take the form of a regular audit, with inspections by an independent organisation with experience and technical expertise in the relevant sector. Unlike a financial audit, however, participants wanted there to be on-site physical inspections of machinery and buildings as well as checks on paper records.

3.3 REGIMES

In no particular order, the ideal regulatory regime, as distilled from the first sessions, would encompass the following features:

- Named staff working for the operator who are responsible for the safety systems
- Checks by a person external to the operator that the safety systems are in place
- Checks by a person external to the operator of the machinery and buildings
- Monitoring by a person external to the operator of emissions (air, land and water)
- Checks by a person external to the operator that drills take place

- If an operator has a good track record there should be fewer external checks
- Reports on incidents that have occurred should be publicly accessible and highlight the lessons learned to prevent the same incident occurring again
- Inspectors must be technically expert in the field
- Inspectors must be independent
- Operators must have prior permission to operate
- Operators should pay to be inspected
- Inspectors should not be known to the operator
- Public sector inspectors
- Inspections should be unannounced
- Inspections should cover the whole plant/operation
- There should be regard for both employee and public safety

Not everyone in every group included every element in their ideal system – this is a composite list. It should be noted that our sample is not representative and so we cannot conclude that the majority view of those who took part in this study would also be the majority view in the wider UK population. During the second sessions participants explained why they believed (or not) that each of these elements is important for each major hazard sector covered by this project. Below we set out their rationales.

3.3.1 Named operator safety staff

All the participants agreed that this was highly important for each sector and for some this was the core element of any regulatory system.

> *"I see everything else coming from this."*
> Man, BC1, Scotland

> *"I think it very easily gets forgotten if there isn't one person responsible for it."*
> Woman, BC1, South-East

> *"You need it to be someone's responsibility to have to act to make sure procedures are in place and to take action when needed."*
> Man, BC1, Scotland

The main rationale for this was a feeling that this is a mechanism by which management can convey to all staff that safety is important and should be taken seriously. It also provides a route through which staff can complain if things appear to be wrong.

> *"I think it's also important for each individual to protect themselves and report something…and to know where to report it and who to."*
> Woman, C2DE, North

In some sectors, particularly offshore, peer pressure was mentioned as a mechanism for ensuring safety procedures were adhered to. It was said that if there was an incident everyone was at risk, so there is a strong incentive for employees to effectively police each other.

> *"You have got to have people there all the time, independent people wouldn't be there all the time, the employees are there all the time."*
> Man, C2DE, South-East

Some participants recognised that many major hazard sites will be large with multiple components and in these situations middle managers needed to take responsibility for health and safety locally.

> *"I think that the different sections on site should have their own person named and responsible for health and safety."*
> Man, C2DE, South-West

> *"I would expect that every manager should be responsible for the safety in his own area."*
> Man, BC1, Scotland

> *"If you have a boss who doesn't bother, then you won't..."*
> Woman, C2D, Scotland

And there was some reference to the need for an identifiable manager who could be brought to trial in the event of an accident.

> *"…one single person who can be prosecuted on the board of directors has to have the executive responsibility."*
> Man, BC1, Scotland

3.3.2 External checks of safety systems, machinery, buildings, emissions and drills

Checks by inspectors external to the operator of safety systems, machinery, buildings, emissions and drills were seen to be central to any regulatory regime. Participants agreed that all these checks had to be in place in all four sectors. There tended to be a presumption that managers would not have effective safety regimes in place without the threat of inspections and prosecution. However, there was a split between those participants who believed that the emphasis should be on physical checks of buildings and machinery and those who had more faith in paper checks of systems and records, although this latter group still believed that some physical checking was required. There are some indications that those in more managerial positions were more likely to feel more comfortable with checking the paperwork.

> *"Paperwork ….should be in order every day and an inspector should just be able to walk through the door and ask to see it. Why give them the chance to catch up on the paperwork?"*
> Woman, BC1, Midlands

Some people suggested that self-regulation can be more stringent than external regulation. These participants believed that managers in major hazard sectors would be highly responsible and conscious of the need for rigorous safety plans and procedures to be in place.

> *"I don't believe that it necessarily follows that people wouldn't self regulate more tightly than you'd have regulation from outside, but you'd have to have external regulation to make sure the internal ones are in place. You're often more critical of yourself than you are of someone else. So I think self regulation of the industry is probably one way to get responsible people, who want to do their best, to try to do their best."*
> Man, BC1, Scotland

Others disagreed:

"They can't really regulate themselves because they would give themselves a lot less to do to make it easier for them."
Woman, C2DE, North

As mentioned, despite a feeling, or perhaps a hope, that companies would be striving for high standards, the need for external checks remained an important factor for everyone.

"If it's all in-house they could get away with anything couldn't they. You're relying on the fact that the companies are reputable…which hopefully they are."
Man, C2DE, South-West

While participants recognised that operators should undertake risk assessments and have contingency plans in place, they also felt that these needed to be tested, in the fashion of a fire drill, to ensure employees know what to do and that plans are effective. Checking that such tests take place should be part of the inspection regime.

3.3.3 Frequency of external checks

As with our previous work for HSE[1] we encountered expectations of high frequency of inspection.

"The more checks there are the better."
Woman, C2DE, North

"Should be checked in- house every week."
"Someone there, and then a proper inspection each month."
Men, C2DE, South-West

There is a strong emphasis on '*catching them* [operators] *out*' (woman, BC1, Midlands).

Having heard about the inspection regimes and the different nature of the major hazard sectors, some people believed that frequency of inspection should vary across the four sectors.

"It's got to be different for each one hasn't it?"
Man, C2DE, South-West

For the most part, participants were not in favour of operators with good track records being inspected less frequently, although a few suggested that those with a poor track record might be inspected more often.

"I think if they have a good track record doesn't mean they should have less inspection."
Woman, BC1, Midlands

Although some participants were content that:

"Organisations should be rewarded if they maintain a good safety record."
Man, BC1, Scotland

especially because:

[1] *"Strategy consultation with hard to reach groups"*, People Science & Policy Ltd, report to the Health and Safety Executive, 2004.

"It frees resources for the guys that aren't getting it right."
Man, BC1, Scotland

Interestingly, even in the second sessions when the existing regimes had been explained, participants did not appear to grasp that there is no norm for the frequency of inspections and that by saying that those who are poor operators should be inspected more frequently, they are agreeing, by the same rationale, that better performers should be inspected less often. Nevertheless, some comments reflected this implicit need for prioritisation of HSE's effort.

"In a perfect world, they'd all get checked a lot, but the facts are you've got so many people and so many hours"
Man, C2DE, South West

The most important point to arise from the discussions around this question is that participants want to punish those underperforming, not reward those *'doing what they should be doing'*.

3.3.4 Publicly accessible reports on incidents

There was support for the idea that all incidents should be investigated so that best practice could be improved. Some participants said that it would be difficult for operators to identify every possible risk in advance, so investigation will help to improve systems and procedures.

"When an incident occurs, investigate it, and write up procedures to prevent it from happening again."
Man, BC1, Wales

"I think they [reports] *should be made easily available to the public."*
Woman, C2D, Scotland

It was also thought that if reports on incidents were publicly accessible, operators would have an incentive to be careful.

"With publicly accessible reports, I think companies may be slightly more conscious and not wanting to make silly little mistakes as well as the bigger ones because they would be aware that anyone could read them…a companies reputation could suffer…"
Woman, ABC1, South-East

"[Reports] *should be made public only as a threat to the company…"*
Woman, ABC1, South-East

For others, while having reports publicly accessible was probably the ideal, they were aware that they personally would not look at such reports.

"I wouldn't say it was irrelevant but it ranked really lower in all of my ones … at times you think to yourself do I really want to know that? Umm, probably deep down we might do, for curiosity but its not really that important, it would be to someone in the industry but I think for your normal Joe Bloggs down the road, he's not really bothered."
"What about if you lived just outside Sellafield?"
"Exactly, it's what concerns you, if it's close to you then yes it would be a priority and you would want to know about it, if it doesn't than I am afraid we are a little bit self-centred."
Men C2DE, South-East

This was partly because there was an assumption that the reports would not be comprehensible to non-experts and there was some support for producing a 'lay' summary. Some participants thought that someone else, for example journalists or interest groups, would be looking at these reports on their behalf and that reports should be available to those who want to examine them. Others felt reports should be available on request only.

> *"If I want the information, I should be able to call the company and say, I want the report on your last safety record and I want them to send it to me. I don't want it published in the paper every Wednesday that there's been fifteen accidents in the local chemical plant."*
> Man, BC1, Scotland

On the other hand, some did not think that making reports available was necessarily a good thing.

> *"Too much time and money is wasted on these things* [reports] *and even if there is a problem it's covered up with words and language. They don't really tell you the truth… Should anything happen, we'll hear about it in the press."*
> Woman, BC1, Midlands

There was also a concern that reports might frighten people:

> *"I'm not sure that I would want to know every little thing that happens, the more you know, you would be frightened silly. Obviously, if something major happened, yeah, I would want to know."*
> Woman, C2DE, North

And in a slightly different tone:

> *"You can do as much damage to the public by telling them as by not telling them."*
> Man, BC1, Scotland

Some participants raised concerns that the Government wants things to look good and may therefore not report or publicise some incidents or problems. With respect to the nuclear sector, there was also a concern that incidents were not publicised and inspections delayed or omitted for reasons of national security. On the other hand, participants were sure that in the UK major incidents could not be covered up. Again the role of the press was mentioned.

> *"If there are accidents, they're always very newsworthy."*
> Woman, BC1, South West

However, questions were asked about the extent to which managers reported incidents, either because of ignorance of the requirement, or because they wanted to look good.

> *"A lot more goes on than gets reported - chemical spills, little accidents in factories. What we hear about, I think it's only the tip of the iceberg."*
> Man, BC1, Wales

3.3.5 Technically expert inspectors

It was widely agreed that in these sectors in particular, technical expertise in the relevant industry is vital to being able to inspect operators effectively, reflecting the concern that operators might try to avoid their responsibilities. Participants said that inspectors needed to be experts in the relevant sector so that they knew what to look for and how things ought to be.

A number of participants rated this as the most important feature of a regulatory system. As the different sectors were introduced in greater depth during the consultation process, participants became more strongly convinced of the need for technical expertise.

> *"Each of these are different so you will have to have an expert."*
> Man, BC1, Wales

Some were however concerned that the HSE might not have access to appropriate levels of technical competence.

> Man 1*: "If someone is trained in a particular field then they are probably better than the HSE."*
> Facilitator: *"Why might they be better?"*
> Man 2: *"Because they have been working in the industry."*
> Man 3: *"HSE don't know the industry like the workers do."*
> Men, C2DE, South-East

This concern over technical competence was also reflected in the view that in some of the major hazard sectors there are very few experts in the UK and there may therefore be a limited number of qualified people able to undertake inspections. In the smaller sectors, participants thought that all the experts would have been trained by the industry, potentially leaving very few people truly independent of the operators. Despite their concerns over independence some participants appreciated the credibility that experience brings.

> *"If they have done the job and they came and said 'what about this?' you are more likely to take notice."*
> Woman, ABC1, South-West

and experienced was seen by some as different from qualified:

> *"Maybe experience is more important than qualifications."*
> Man, C2DE, South-East

3.3.6 Independent inspectors

The independence of inspectors was very important to participants. There were different understandings of independent but in general, participants meant people with no financial interest in the operator and particularly no vested interest in whether the organisation they were inspecting ceases operation.

> *"Someone that is able to shut them down, I would say, if they have the power to shut them down then they are independent."*
> Man, C2DE, South

3.3.7 Prior permission

One important feature of the four major hazard sectors under consideration is that potential operators need permission from HSE before they can operate. In most sectors, while HSE can stop operations it deems dangerous, it cannot prevent initial start-up (although other organisations may be able to do so).

This was not an element of inspection regimes raised spontaneously by participants, probably because they were not aware that such an option existed. However, when the regimes were explained during the second sessions, this was picked-up by some participants. On the whole

participants were in favour, some rating this as a particularly pertinent feature for high hazard sectors.

> *"It goes without saying I would've thought."*
> *"You have got to have the safety before you start."*
> Men, C2DE, South-East

It was also seen to have the additional benefit of being an easy way to ensure compliance.

> *"Once permission is given that the company concerned actually purchases a licence to operate and that if they don't abide by the rules and regulations that the license is withdrawn."*
> Woman, ABC1, South West

In the initial explanations of the different regimes, the Nuclear Installations Act appeared to be more prescriptive, setting out a number of topics that a potential operator must address, with the other three regimes relying on operators identifying relevant issues in their safety case. In one group participants preferred the nuclear sector approach. In particular there was some concern that operators, left to identify the risks, would set lower standards than HSE.

> *"It's human nature to take short cuts"*
> Man, ABC1, North

This group wanted to see HSE setting out "*guidelines*" or using a "*handbook*" to ensure that operators were identifying the critical issues across all four sectors[2]. For others, the discipline of setting up systems and having them judged before operations could commence was viewed as good practice. In one of the ranking sessions one participant offered the following view, which was endorsed by other members of the group.

> *"I have only put number ten* [prior permission to operate] *as basically without that none of the others would happen, if they don't get permission."*
> Man, ABC1, North

It might be that the requirement for prior permission should be used by HSE as an indicator of the way that the major hazard sectors are controlled.

3.3.8 Inspection fees

Whether or not operators pay to be inspected was more controversial. For some participants, businesses making money from operating should pay for their inspections – this was seen as just another cost to be included in operating budgets.

> *"I've put it high on companies paying for inspections because they're a commercial operation. If you want to run the business you've go to pay for it because they're making enough out of it anyway."*
> Man, BC1, Scotland

> *"I don't think that the taxpayer should pay it, they should pay themselves."*

[2] In subsequent conversations with the HSE team, the group was reassured by explanations that the regimes were actually quite similar as in all cases there was broad guidance along the lines "*here are the things you need to cover*". This conversation illustrates the impact that the way in which information is presented can have on participants' views.

"Why should we pay for these checks?"
Men, C2DE, South-West

Others took a more pragmatic approach:

"To me it doesn't matter who pays as long as safety people come."
Woman, C2D, Scotland

"I don't care who pays as long as it gets done."
Man, ABC1, North

Some, but not all, participants recognised that whether funded through taxation or charges on operators that the costs of inspection would be passed on to the general public.

"Companies paying to be inspected, I don't think that's very important…"
Man
"Yeah it doesn't bother me."
Woman
"…it doesn't affect anyone."
Man
"If it came out of the company it's only going to come out of us."
Man
"They'll put their prices up anyway."
Man
"We always end up paying for it in the long run."
Woman
Group conversation, Men C2DE and Women BC1, South-East

Others were concerned that smaller operators would not be able to continue trading if they had to pay, although it was argued by others that in these sectors only larger companies were likely to be operating. Some put forward a case for variable fees dependent on the size of the operator, their performance and/or the nature of the hazard.

"….not all companies are large, they should have a lower tariff. [There could be] *different tariffs depending on what the companies are, for example a plant versus a storage place."*
Woman, C2D, Scotland

"If it's just a small company who's doing everything correctly, you go and tell them it's all fine and then charge £1,000. If it's fine you should refund the fees."
Man, BC1, Scotland

"If you have a good inspection you shouldn't pay. You should pay if you get a bad report. Perhaps pay up front and if good get some of it back."
Woman, C2D, Scotland

Where the operator was in the public sector, however, there was greater support for free inspections.

"This [nuclear] *is not a commercial business, so I see this differently. This is a safer industry and may be better, given that this might be better for the environment in the future."*
Man, BC1, Scotland

The quote below shows that some people were confused about the nature of the public sector, but importantly, it also reveals that some participants were very sceptical of the government:

> *"I don't believe you* [HSE] *are just recovering costs because the government wouldn't do it unless they were making a profit."*
> Man, C2DE, South-West

3.3.9 Unknown inspectors

Participants are wary of 'cosy' relationships developing between operators and inspectors that might result in inspectors being reluctant to point out faults or take action against infringements of health and safety practices.

> *"It wouldn't be good for them to get too familiar."*
> Woman, C2D, Scotland

They therefore support rotation of inspectors but until the interactive sessions with HSE staff, they had little or no understanding as to the benefits of inspectors becoming familiar with sites or that inspections are conducted by teams, rather than by single individuals. Once participants developed a deeper understanding of the issues involved with inspections, some participants were comfortable with inspectors working on a site for a few years before being rotated.

> *"You can do it for so long and get the respect of the people and talk to them in more of a straight forward way because you know each other, but also from the inspector's point of view he is getting a much more overall view of his patch as it were, but then after a year or so you move on."*
> Woman, ABC1, South

Participants expected the relationship between HSE inspectors and operators to be confrontational. The idea that there a working relationship develops and that inspections are more effective if the inspectors understand the specific site comes as something of a surprise, on the whole. Having heard the arguments some participants accepted that there is a need for the inspectors to build relationships with operators but they wanted to see checks within the system to ensure that inspectors did not become too close to the operators. This group wanted to see rotating teams of inspectors where individuals overlap in their period at a site, thereby providing continuity and change and a balance between site specific understanding and objectivity.

> *"There should be some overlap of old staff and new staff."*
> Woman, C2D, Scotland

Others remained convinced however, that professionals should be able to inspect any site within their sector of expertise and that the dangers of relationships developing, which might jeopardise inspections being conducted properly, were greater than any benefits of knowing the site and the operator.

The HSE representatives were asked about bribery by some participants. The HSE team made it clear that this is not part of the culture in the UK although those with experience of working in commercial operators outside the UK had been offered bribes that they had refused.

3.3.10 Public sector inspectors

Some of the participants felt that the inspections should be handled by the public sector to prevent corners being cut by private sector companies motivated by profit.

> *"If you put anything out to private they are trying to make money out of it, so they may cut corners a little bit."*
> Woman, C2D, North

> *"You don't need a profit element in health and safety, you don't need it."*
> Man, BC1, Wales

and because:

> *"Only they* [the Government] *have the power to close them down or fine them."*
> Man, BC1, Wales

Other participants said that as long as HSE was overseeing private companies and setting the rules, they felt comfortable with HSE contracting-out inspections and that the element of competition this introduced might be a driver for good. The most commonly drawn parallel was the M.O.T. system for inspecting cars, where private companies inspect cars, overseen by the Department of Transport. However, this analogy also raised issues of trust in the competence and integrity of some garages that offer M.O.T. inspections. The question of integrity was then raised in the health and safety context.

> *"Two commercial companies can get too close and might think they'll loose the contract."*
> Man, BC1, Scotland

On the other hand:

> *"It's a more cost effective way of getting resources than using the expertise that you employ and paying for it constantly. You can buy it in when you need it."*
> Woman, BC1, Midlands

Some participants identified a role for insurance companies in regulating companies through the levels of premiums. The Corgi system was also held up as an example of good practice in regulation.

As already mentioned, there were some participants who were sceptical of the independence of "*Government*".

> *"They're* [the operators] *pumping money into the Government ain't they?"*
> HSE Representative: *"It's the same as any taxpayer."*
> *"But they're* [the operators] *pumping more money into the Government than most people."*
> *"I can't see the Government, or HSE, turning round and closing down Shell or BP."*
> Men, C2DE, South West

When sanctions such as fines were mentioned by the HSE representatives, they were often felt to be relatively minor punishments when compared to the potential financial clout of the operators.

We found some concern that public sector organisations were 'overworked' or 'overloaded'. On balance however, the general view was that the public sector offered the best safeguards.

"Because it's the Government I would hope that they have no financial links with the company they're checking."
Man, C2DE, South West

3.3.11 Unannounced inspections

There is strong support for unannounced inspections. Many participants recount stories of current or previous employers who instruct staff to tidy-up because they know that the HSE inspector is coming on a certain day. Some participants appear convinced that HSE inspectors are in some way colluding with operators and/or making their own lives easy and there was some scepticism as to whether a system of announced inspections really constitutes regulation.

Participants' own experiences of external inspections influenced their reaction to announcing inspections. A number had experience of financial audits:

"Having gone through auditing inspections, I know that when they're planned you can prepare for it."
Man, C2D, Midlands

And some had experienced OfSTED inspections:

"I work in a school and we know OfSTED is coming, and the school is totally different in that two weeks beforehand. The day after OfSTED has gone, it's back to how it was."
Woman, BC1, Midlands

Once the HSE staff had explained how the inspection system works in practice, some participants became more convinced that some notice was necessary for logistical reasons, for example it was recognised that it is not possible to arrive unannounced on an oil rig.

"You need the people there who are going to answer the questions and if they aren't prepared then it wastes your time."
Woman, C2DE, North

"I think it's better to have an announced one, because like you said all the personnel, if they know you are arriving, they are there."
Man, C2D, Midlands
"I'm more for catching them out"
Woman, BC1, Midlands

Nevertheless, many still had reservations.

"I still believe [in] *unannounced inspections…if they know the inspectors are going to be there on a certain day then everything will be spick and span."*
Man, C2DE, South West

While there was some emphasis on *'catching people out'*, participants wanted inspectors to *'see it like it is'* not just when everything is spruced-up for an inspection. This is at the root of their animosity towards inspections being announced. Some participants were persuaded that the current system is effective by HSE staff explanations that exactly what would be inspected on any particular visit was not necessarily announced and that the ability to spot check any aspect of an operation is retained.

3.3.12 Whole plant inspection

Most participants imagine an HSE inspector as someone going around looking at things and they envisage this in a factory, shop or office environment. They therefore believe that an inspection should cover the entire operation/premises. Others felt that efforts should be targeted.

> *"Look at the things that have the potential to go bang…get a general overview of everything else."*
> Man, BC1, Scotland

It was however expected that inspectors would be able to respond to what they found.

> *"You can't separate them…there are certain things that need specific inspections but you also want a general overview."*
> Man, BC1, Wales

Whilst physical inspections were seen as critical, some participants also believed that checking paper records is an important factor.

> *"They're doing enough checks; they can't do checks on everything. If training is not being done on the right people, it will show through on other checks that are being done."*
> Woman, BC1, Midlands

> *"I think in some ways it's more important that the systems are right"*
> Man, ABC1, North

A remaining concern was that something will be hidden from the inspectors and therefore unsafe environments will not be rectified, physical inspections need to be capable of addressing this.

> *"I feel that the system check, the paper check initially is very important but the inspection more, not so much inspection of the thing you are inspecting but inspecting the culture, actually talking to the people…you have to prove that they are carrying out what they say they are."*
> Man, C2DE, South-East

3.3.13 Public safety

The HSE staff who took part in the second sessions saw one of the common features of the major hazard regimes as being 'containment'. Workers in these sectors are covered by standard health and safety legislation and protecting the public, as against workers, is a central feature of the major hazard regime.

In general, participants believed that both the public and workers should be considered in safety regimes.

> *"Life is life and people's safety should be paramount."*
> Woman, C2D, Wales

Interestingly, participants saw employee and public safety as inextricably linked.

"I believe that if you take employee safety as paramount, public safety comes as a given."
Man, BC1, Scotland

"My theory is that if you make the employees safe, then the public will be safe."
Woman, BC1, South-West

This implies that participants believe that systems that ensure that employees are safe will also ensure that the public are safe. Employees are likely to be the first to suffer from any health and safety incidents, so if they are safe, the public will be as well.

3.4 SECTORAL DIFFERENCES

During the earlier sessions in this project there was an emerging hierarchy of concern, with the nuclear sector largely considered the most frightening, the chemical sector the next most worrying, the offshore sector the least likely to cause harm to the general public and the gas supply network probably the least dangerous overall.

After the second sessions and the interaction with the HSE team, the increased appreciation of potential hazards across all four sectors started to lead to a fairly homogenous view of the important features of safety regimes. When asked to judge how important different features were, taking an average across all the participants shows virtually no variation across the sectors.

"I think the same applies right through this lot, I can't see any difference in any of the industries."
Man, C2DE, South-East

The results of the multi-criteria analysis clearly show that each of the elements discussed above was given a very similar score for each sector. We can therefore conclude that for all four of these major hazard regimes, a common *framework* for a regime would be *broadly* acceptable.

"An approach to safety should be the same regardless of industry."
"Broadly yes, I wouldn't say exactly the same."
Men, BC1, Wales

Of course at a personal level, individual participants held different views on different sectors.

"I think the major ones of those four [regulatory regimes] *is the safety case, it's probably the best way because they are tailored to the industry."*
Man, C2DE, South-East

Nevertheless, it was recognised that the *implementation* might be different in the four sectors. For example:

"…machinery checking is not applicable to the gas pipeline because they are underground and can't be checked…."
….the oil rig, it's nowhere near the population, the only other thing that's going to be affected is the environment. That's why I varied the thing."
Men, C2DE, South-East

3.5 CONCLUSIONS

This section has set out participants' views on various elements of any regulatory regime, with the elements determined by the participants themselves.

In the major hazard sectors, safety is seen as starting with responsible operators. Participants realise that inspectors cannot be present everywhere all the time. Indeed this would go against their belief that inspectors should remain distant from operators. Hence for health and safety to be effective operators must see health and safety as important and the regime must be working to ensure that all operators act responsibly. While many participants hoped that safety would be seen as critical by operators, a combination of commercial pressure and the inevitability of human failings meant that the overwhelming majority of participants felt that safety could not be left solely to operators. Thus regulatory and oversight regimes and the threat of prosecution were thought to be necessary for the major hazard sectors.

Physical inspections by external experts are at the heart of these regulatory and oversight regimes in the minds of all those who took part in this study. Participants tended to see limited value in 'paper' checks alone. The threat of operators being 'caught out' and of being called to account is an important part of maintaining health and safety for workers and the wider public for these participants. Some participants said that they did not think that the punishments are sufficiently severe. Participants expected to see significant financial penalties meted out to companies that failed to comply with requirements, and closure of a facility was frequently mentioned as a desired sanction.

A number of participants knew something about the concept of safety cases and many were aware of the idea of risk assessments from experiences and practices in their own working lives. Nevertheless, none was aware of the details of how major hazard regimes operate in practice or the details of these regimes. Indeed, there were varying degrees of ignorance of the ways in which HSE operates, its powers, its public sector status, and what this status means.

The discussions with HSE representatives did change the opinions of some participants on some issues, but only at the margins. On the whole views were tempered rather than changed.

4. CONCLUSIONS AND UNDERLYING PRINCIPLES

4.1 INTRODUCTION

As the consultation developed, participants devised core features of an inspection/oversight regime and these have been described in chapter 3. We asked participants to score each of these features out of ten for each of the four major hazard sectors, once they had heard a little about the sector from the HSE representatives. At the very end of the second session we asked them for their top five features. Taking the results of these two scorings together we have found remarkable consistency between sectors and across the elements of a regime.

In conclusion, there is one underlying principle, namely that the operators should act responsibly. The inspection/oversight regime should ensure that operators are acting responsibly and we were able to determine the key aspects of a regime that participants felt would do this. In this chapter we set out the results of this analysis.

4.2 RESPONSIBLE OPERATORS

It was recognised that it is not possible, nor necessarily desirable, for inspectors to be on operator sites continually. The regulatory regime must therefore ensure that operators are complying with health and safety at all times – that is that they are acting responsibly.

Perceptions of operators were divided. Some participants believed that inevitable commercial pressures would lead operators to reduce precautions to minimum levels.

> *"Letting the commercial business assess their risk of what they are doing there is always a conflict of interest."*
> *"It's like marking your own exam paper."*
> Men, ABC1, North

Others hoped that operators in these sectors would be aware of the potential hazards and act accordingly.

> *"Should we not assume that we've got some responsible people in charge of these places and they want to do the best they can?"*
> Man, BC1, Scotland

> *"I would expect them all to have a policy they could implement the minute there was a problem."*
> Woman, ABC1, South West

Participants both hoped and assumed that the rigour of the health and safety regime is related to the scale of the risk and the hazard the sector poses.

> *"If the risk is high the precautions will be taken more seriously."*
> *"Because it's so dangerous it's probably really heavily regulated."*
> *"The bigger the risk I am sure the more paperwork that is done."*
> Men, ABC1, North

There was a presumption that operators who were protecting their employees from major incidents were automatically protecting the public and *vice versa*.

4.3 KEY ELEMENTS OF A REGULATORY REGIME

The three key elements of a regulatory regime were deemed to be:

- external checks of health and safety systems;
- expert inspectors; and
- identified health and safety staff within the operators.

Participants believed that it is important that operators have health and safety systems in place and that an external team check that those systems exist and are effective. It was important to participants that inspectors understand the technical side of the sector they are inspecting in order to be able to make informed judgements.

Having a board member within the operator take personal responsibility and for this individual to be known as the responsible party was also important for the participants.

At the second level, the regime must include:

- external checks on buildings, that drills are taking place and that training is being provided;
- external monitoring of emissions;
- independent inspectors; and
- prior permission to operate from HSE.

The order of importance of these elements varied for different individuals.

Less important to participants was that reports on incidents should be publicly available or whether companies should pay for their inspections. Taken as a group, participants were not in favour of companies with a good track record being inspected less often, although they did want those that perform badly inspected more often.

In summary, we could deduce the following system would meet with general approval:

- inspection of systems and procedures by independent and technically expert people;
- physical inspections by independent and technically expert people;
- a range of inspection options, including unannounced spot checks, planned inspections of particular features and general inspections of culture and practice;
- frequent inspections, with regularity reflecting both potential hazards, perceived risk of the operator, as well as of the sector; and
- appropriate sanctions for operators failing to comply with set standards.

The system should be run and overseen by the public sector but subcontracting individual tasks (rather than whole inspections) to the private sector is acceptable where specific technical expertise or capacity is needed.

We have explored the scores allocated to each potential element of a health and safety regime for each sector and the overall rankings of the elements for men and women separately, for different social grades and for different age groups. The sample was not selected to be statistically representative, and in any case it is too small for quantitative analysis, so we have not reproduced the results of our analysis here. Nonetheless, there is a remarkable consistency in the pattern and the scale of the findings. That is, both the rankings of relative importance and the scoring of absolute importance are remarkably consistent between these differentiated

groups. This, taken together with our qualitative analysis of the data, enables us to be confident in our findings.

4.4 HSE'S ROLE

During the discussions we encountered scepticism about the role of government and some concerns about the expertise available to the HSE. However, the overall conclusion by participants was that HSE was performing a crucial role and doing it well.

> *"It's nice to know that there are measures are in place, just in case things happen."*
> *"That's as good as it can get init, these guys going round doing that with loads of years experience, that's good enough."*
> *"I'm happy with the system as it is to be honest…as a member of the public."*
> Men, C2DE, South-West

> *"Well done, keep up the good work!"*
> Man, BC1, Scotland

Although not everyone was this effusive:

> *"I suppose they must be doing something right if there hasn't been a member of the public killed."*
> Man, BC1, Scotland

4.5 MAINTAINING CAPACITY

It was interesting to note that in some groups, the process of the consultation itself led to some concerns over HSE's future intentions. In more than one location, people questioned the purpose of the consultation.

> *"Is it an ongoing process, is it constantly reviewed by the HSE or was there a specific reason for doing this?"*
> Man, C2DE, South-West

Some wondered whether the consultation would be used as a way of reducing the amount invested in HSE.

> *"Are you asking these questions because there are independent bodies being set up to do the same work as the HSE?"*
> *"They're phasing the HSE out"*
> Men, C2DE, South-West

One participant specifically refused to prioritise the most important features of a safety system as this could be taken as an implicit suggestion that other features were not important and therefore not necessary.

> *"I didn't feel I could,* [prioritise the top 5 features]… *because they are all an interconnected system without which if you took any of these out then it would no longer work."*
> Man, ABC1, North

This sentiment attracted support from the remainder of the group. Maintaining the capacity of the HSE was seen as vital elsewhere as well.

> *"I can't think of any other agencies because you have all the expertise."*

Woman, ABC1, South-West

The quote that perhaps best sums up the overall response to HSE's role in the major hazard sectors reflects the perceived success in minimising major incidents.

> *"If it's not broke don't mend it."*
> Man, C2DE, South-East

This rosy view does not however mean that there is not scope for improvement.

4.6 FUTURE DEVELOPMENTS

A number of participants referred to the fact that new legislation often seemed to be triggered by major disasters.

> *"It's a shame it's got be a disaster before anything is really set into place, it's quite a shame…I know there were regulations before but it takes a lot of people to die to get things done properly."*
> Woman, ABC1, South-East

One way of maintaining improvement that emerged after the interaction with the HSE representatives, was through building relationships with operators to encourage the continual raising of standards. This was not an approach that had generally occurred to people in the first sessions, where they had seen a more confrontational approach between the enforcer and the operator.

> *"So most people must be on-side? It's not you* [HSE] *and them* [industry] *butting heads. You're working together to make sure it's safe."*
> Man, BC1, Scotland

> *"Its quite a holistic thing by the sounds of it…I saw it more like the police of the industry rather than helping them along."*
> Man, C2DE, South-West

However, the caveat to this is that the HSE must ultimately maintain its position of authority:

> *"You're not there to keep people working are you? You're there to keep people safe and that's the way it should be."*
> Man, C2DE, South-West

and independence:

> *"A relationship is very important, to build-up a relationship, but sometimes they can get a bit too cosy."*
> Woman, ABC1, South-West

4.7 SANCTIONS

It was generally felt that existing sanctions were too lenient, with fines being perceived as small relative to the financial scale of the operations being regulated. There was an assumption that fines went to HSE and when the system was explained some participants felt that fines should go directly to HSE to support their work. It emerged in the public protection research in which some participants had already participated, that some were unclear as to what 'prosecution' actually meant.

Closure was the ultimate sanction participants wanted to see but they were sceptical that this would be used and were surprised to hear that it had been used.

4.8 CONCLUSIONS

The key to a system that will have the confidence of the public is one that ensures that operators are working responsibly. While participants, especially those in more managerial positions, accepted that some of this could be done through desk-based assessments of systems and records, there remained a strong emphasis on the need for physical checks to be conducted by independent inspectors who are technical experts in the sector.

Generalising from our findings, we can conclude that people who do not live in close proximity to an installation in a major hazard sector do not think about the possible dangers posed by such installations except when there is a newsworthy incident. We can deduce this not only from the responses which showed that only participants who claimed to live, or to have lived, near to an installation were aware of the impacts of such installation but also from the sample-wide reaction to the off-shore sector.

On the whole, participants assumed that no news is good news and that the media would pick-up serious incidents. There was no knowledge or understanding of the health and safety regimes that ensure that these sectors minimise their risks and control their hazards. At one level there does not need to be any such knowledge among the general public, but if HSE is concerned that the organisation's efforts go unnoticed, the subjects for publicity would be closures, prosecutions and fines. These are the actions that reassure the public that there is a regulatory system in place, that it is effective and that it has teeth. Changes to the regimes or implementation strategies that produce these outcomes are of interest only if a serious local or national incident could be identified as resulting from change.

APPENDIX 1 INTRODUCTION

These appendices provide technical information on how the project was carried out.

A2, provides an overview of the methodology. A3 is the recruitment questionnaire, A4 provides the topic guide for the first sessions, A5 the topic guide for the second sessions and A6 the documents the participants completed during the second sessions as part of the multi-criteria analysis.

Recruitment of participants to the first set of focus groups was sub-contracted to Synovate. Plus Four recruited the second set of groups.

APPENDIX 2 METHODOLOGY

A2.1 INTRODUCTION

This project was developed from another that PSP was undertaking for HSE. Participants who were taking part in the Public Protection Pilot Project were invited to take part in this study. This produced 'Sample 1' below. Following initial meetings with the Major Hazards team at HSE it was decided to expand the scope of this project to provide a broader sample, so that we could be more confident of the conclusions, bearing in mind that the public protection project had been a relatively small scale pilot study. This produced 'Sample 2' below.

It is important to remember that Sample 1 groups met once with a member of the Enforcement Policy Group from HSE present. This early exposure to a member of the HSE influenced the views of those taking part because it coloured their view of HSE. Not only did they know more about HSE as an organisation, but we have found that once participants engage interactively with members of HSE (or any organisation)[3] they become more positive towards the organisation. Hence we found that Sample 2 was more sceptical about HSE in the first sessions than Sample 1.

A2.2 SAMPLE

Sample 1 – all had previously taken part in the Public Protection project. Fieldwork for that project took place in October 2004.

Glasgow	**Cardiff**	**Birmingham**
Women C2D 30-55	Women C2D 30-55	Women BC1 30-55
Men BC1 30-55	Men BC1 30-55	Men C2D 30-55

Sample 2 – fresh sample for this project. Fieldwork took place between December 2004 and February 2005.

Leeds	**Chelmsford**	**Exeter**
Men ABC1 20-35	Women ABC1 20-35	Women ABC1 50-70
Women C2DE 50-70	Men C2DE 50-70	Men C2DE 20-35

The first session lasted 1½ hours and involved between five and ten individuals. The second sessions brought the two groups in each location together and lasted three hours. The recruitment questionnaire for Sample 2 can be found in appendix 3.

A2.3 TOPICS

The topic guide for the first sessions was the same for both Sample 1 and Sample 2, with the exception that Sample 2 first sessions began with a brainstorming on 'health and safety' which for Sample 1 has been used as a warm-up in the Public Protection study and so was not needed. A copy of the topic guide can be found at appendix 4.

The second sessions were modified slightly between those in which Sample 1 took part and those in which Sample 2 took part. There were two main changes. Firstly, in the Sample 1 second sessions, HSE representatives provided information on each of the four regimes before participants were asked to score each regime on the regime elements, whereas in the Sample 2

[3] See for example: *"Public dialogue on train protection"*, People Science & Policy Ltd, report to the Health and Safety Executive, January 2003.

second sessions the scoring took place between the descriptions of each regime. Secondly, in the second sessions the two groups of participants from the location were brought together for the first part of the session to listen to the information from HSE and ask questions. In the second part of the sessions Sample 1 groups were mixed into two new groups, mixing men and women and social grades, for the more in-depth discussions. In the Sample 2 second session participants remained in their original, single gender, groups for the discussions.

The topic guide for the Sample 2 second sessions can be found in appendix 5. Appendix 6 contains the scoring sheets completed by participants as part of the multi-criteria analysis.

A2.4 ANALYSIS

The discussions were all recorded and analysed by listening back to the recordings. Notes and verbatim comments were transcribed and notes made for each group from which major issues were identified and illustrative quotes identified for the report. In addition to the audio recordings, flip chart notes were taken during the sessions and participants' scoring sheets were collected and analysed using an Excel spreadsheet.

Analysis across the groups was then undertaken, looking for common themes, understandings and ideas.

APPENDIX 3 – RECRUITMENT QUESTIONNAIRE

PEOPLE SCIENCE & POLICY LTD

PUBLIC SAFETY RECRUITMENT QUESTIONNAIRE

Briefing

We want to recruit 6 groups of 9 people for 8 to show to the quotas set out at the end of this recruitment questionnaire. There will be 2 groups in each of 3 locations. The groups will take place on the dates and times indicated below and will be reconvened. Groups will be run for 1½ hours on the first occasion and be reconvened as three groups (one in each location) for 3 hours on the second, with a break in the middle. The incentive for the first session is £35 and for the second £55.

We would like you to organise the venue and to use the same venue for both sessions. A separate sheet giving details of the venue requirements is attached.

The subject to be discussed is the health and safety of the public.

Introduction

Hello my name is… and I work for…... We are looking for a cross section of people to take part in discussions about the health and safety of the public. It is not only about work, so we are interested in including people who do not work. Could you spare me a few minutes to answer some questions please?

We are looking for people to come to a session on SEE DATES BELOW, which will last 1½ hours and another session on SEE DATES BELOW, which will last for 3 hours with a break in the middle.

Q1	**Do you or any of your close relatives work in any of the following occupations?**		
	Market research	1	CLOSE
	Journalism	2	CLOSE
	Public relations	3	CLOSE
	Marketing	4	CLOSE
Q2	**What was your age on your last birthday?**		
	20-35	1	CONTINUE
	36-49	2	CLOSE
	50-70	3	CONTINUE
Q3a	**Are you…**		
	Working full time	1	CONTINUE
	Working full time	1	CONTINUE
	Working part-time	2	CONTINUE
	Retired/not working	3	CONTINUE
	Unemployed	4	CODE AS E
	Student	5	CODE AS C1
Q3b	**Job Title (WRITE IN)**		
Q3c	**Job Description (WRITE IN)**		
Q3d	**Size of Company (WRITE IN)**		
Q3e	**Qualifications (WRITE IN)**		
Q3f	**How many people are you responsible for? (WRITE IN)**		
Q3g	**CODE SOCIAL GRADE**		

	A	1	CHECK QUOTAS
	B	2	
	C1	3	
	C2	4	
	D	5	
	E	6	
Q4	**Gender**		
	Male	1	CHECK QUOTAS
	Female	2	
Q5a	**Have you attended focus groups or in-depth interviews in:**		
	The last 6 months	1	CLOSE
	The last two years	2	GO TO Qb
	More than 2 years ago	3	Go to Qc
	Never attended any group discussions	4	RECRUIT
Qb	**How many focus groups/in-depth interviews have you been to in the last 2 years? (i.e. 6 months - 2 years ago)**		
	1 or 2	1	GO TO Qc
	More than 3	2	CLOSE
Qc	**What was the subject of the discussions/in-depth interviews you took part in? (WRITE IN SUBJECT MATTER AND APPROX - WHEN IT WAS FOR EACH OCCASION).**		
	IF ABOUT HEALTH AND SAFETY - CLOSE. THE RESPONDENT MUST NEVER HAVE PARTICIPATED IN A DISCUSSION ON THE SAME SUBJECT. OTHERWISE RECRUIT.		
	• At least half of each group/set of depths must be **brand new** recruits. • The remaining half can have attended up to a maximum of 2 groups/depths in the last 2 years (ie. 6 months -2 years ago) • **None** to have attended any group/depths in **last 6 months** • **None ever** to have attended a group/depths on the same subject If you have any queries, please call your Manager		
Qd	The group will be recorded for later analysis. Are you happy to take part?		
	Yes	1	CONTINUE
	No	2	CLOSE
Qe	Another company will be running the discussions. Are you happy for us to give them your name, address and telephone number so that they can contact you between the sessions?		
	Yes	1	RECRUIT
	No	2	CLOSE

DATES

Exeter

20 Jan, women 6.00 – 7.30 pm, men 7.45 – 9.15 pm
17 Feb, convene 6.30 – 9.30 pm

Chelmsford

26 Jan, women 6.00 – 7.30 pm, men 7.45 – 9.15 pm
24 Feb, convene 6.30 – 9.30 pm

Leeds

25 Jan, women 6.00 – 7.30 pm, men 7.45 – 9.15 pm
22 Feb, convene 6.30 – 9.30 pm

APPENDIX 4 FIRST SESSION TOPIC GUIDE

BACKGROUND

These groups of participants are meeting for 1 ¾ hours in groups of 8-9 and again for three hours in groups of 16-18 next month. All the sessions will be run with two moderators. This document sets out the details of how the first sessions will be run with (below) a brief outline of how the second sessions will be structured.

We will be using an approach based on multi-criteria assessment. This involves using the first sessions to brief participants on the major hazard sectors, the regimes in place to assure public safety in these sectors and identifying the criteria which participants believe to be important in ensuring health and safety in these sectors.

The second sessions will enable participants to interact with HSE staff involved with the four major hazard sectors to obtain more information. Participants will then score each of the criteria identified from the first sessions for each sector. Analysis of the results of this exercise along with the reasons for participants' decisions, will enable us to deduce the preferred regimes for the four sectors.

AIMS

The overall aim of the project is to explore whether or not there are general principles that the public identifies in determining the level of scrutiny required on major hazard sites to provide assurance that the potential risks and hazards are under adequate control. Allocation of HSE's budget and delegation of enforcement/inspection to third parties are also important issues to cover.

The aim of this first session is to provide some information on four sectors HSE classes as major hazards – nuclear sites, COMAH sites, gas supply and off-shore – including information about the nature of the sites, H&S track record and the regulatory regimes in place and HSE budgets. Until participants have a better understanding of the potential risks and hazards in each of the four sectors, and about the existing regulatory regimes they cannot engage in discussions with each other and HSE about the efficacy of the regulatory regimes.

In the first sessions we also want to identify criteria against which the inspection regimes of these sectors can be assessed as fit for purpose. We also want to gather questions that will be asked of experts in each of these fields at the second sessions.

Facilitator briefing	Questions and techniques
Standard introduction.	• Introduce self • Introduce PSP and independence from the client • Stress confidentiality We want to get your first impressions then we'll tell you who the client is • Introduce anyone else who is observing or helping • Introduce topic guide and idea that there are no right or wrong answers. Everyone is entitled to their own view and we'd like to hear it – rules of engagement. • Permission to tape record the discussions and reassure on confidentiality in reporting TAPES BEING PASSED TO GROUP OF ACADEMICS WHO ARE INTERESTED IN WHAT THEY HAVE TO SAY
Round robin	• Ask participants to introduce selves
First impressions	
Explore what health and safety means to participants. ONLY FOR SAMPLE 2 Explore what public protection means.	Word association brainstorming. RECORD ON FLIPCHARTS PROBE FOR REASONS BEHIND SUGGESTIONS Is health and safety at work relevant to you outside of your workplace? Why? Why not? INTRODUCE HSE AS CLIENT Explain that HSE is responsible for enforcing health and safety at work legislation, but as people have identified above this can relate to people who are not necessarily at work, but might be affected by work activity.
This project	In this session we want to talk about 4 important sectors: nuclear sites, chemical sites, the gas network and off-shore sites, such as oil and gas rigs. SHOW LIST ON FLIP CHART
THROUGHOUT THE SESSION RECORD KEY QUESTIONS FOR HSE	Does anyone have any experience of any of these sectors? Has anyone ever worked in any of these industries? Or close friends or family who work in these sectors? PROBE TO ESTABLISH WORK RELATIONSHIPS AND GENERAL KNOWLEDGE OF THESE SECTORS.

	In terms of dangers to the public, which sector do you think is the safest? And which is the next safest? And the next? RANK ORDER FOR THE FOUR SECTORS
Nuclear	What do people think are the dangers of this sector? What are the dangers for those working in nuclear plants? What are the dangers for those living around nuclear plants? PROBE FOR: what could go wrong? On a scale of 1 to 10, how dangerous is a nuclear plant? Why do you say that? USE FLIP CHART TO RECORD KEY RESPONSES ON THE SECTORS
• NB Chernobyl in 1986 in the former USSR. The accident killed more than 30 people immediately, and as a result of the high radiation levels in the surrounding 20-mile radius, 135,000 people had to be evacuated. It is suggested that a further 2,500 people were killed from cancers caused by the radiation from the accident. - No such accidents have occurred in the UK.	BRIEF PARTICIPANTS There are approximately 35 nuclear sites in the UK. The nuclear sector includes: • Nuclear reactors (electricity); • Reprocessing sites; • Military sites; • Nuclear fuel manufacturing sites; and • Decommissioning and nuclear waste. The Nuclear Safety Newsletter for July 2004 reveals the types of incident that can, and do occur) *"An incident occurred on 14 June at Devonport involving the derailment of a rail tug unit while transferring irradiated submarine reactor fuel from a dock to a Low Level Refueling Facility. The actual trolley used to transport the fuel module container did not derail, there was no release of radioactivity and nobody was injured as a result of the event. The HSE was satisfied that the irradiated fuel module remained safely contained and cooled at all times during the recovery phase of work. HSE inspectors continue to monitor the remaining stages of the recovery process."* *"On 9th June around two cubic metres of irradiated water leaked from a water storage tank. The liquor was contained within the bounded treatment plant but evaporation led to a small increase in off-site gaseous release (within authorised discharge limits) and elevated activity levels in the radioactive waste treatment plant that required special precautions to control doses to workers."*

	Does this change your views on the dangers? On a scale of 1 to 10, how dangerous is a nuclear plant? Why do you say that?
Onshore Chemical WE ARE COVERING ALL SECTORS COVERED BY COMAH EXCEPT MICRO-BIOLOGICAL, RAILWAYS AND STORING EXPLOSIVES	ASK PEOPLE WHAT "*Places that make & store chemicals*" CONJURES UP FOR THEM What do people think are the dangers of this sector? What are the dangers for those working in these places? What are the dangers for those living near sites? PROBE FOR: what could go wrong? Image of the sector, what are they thinking of when they think of the chemical sector? On a scale of 1 to 10, how dangerous are these sites? Why do you say that? USE FLIP CHART TO RECORD KEY RESPONSES ON THE SECTORS
NB Flixborough 1974 an explosion killed 28 workers and injured a further 36. There were also 53 reported injuries off-site. New regulations were brought in as a result of this accident.) Over the last ten years there have been 50 major accidents at establishments now covered by the regulations. Of these, 6 involved death or serious injuries to workers, 14 less serious injuries to employees, and 4 injuries to people off-site. The occurrence of near miss serious incidents is much higher and it is reported to be largely a matter of chance whether they result in injury.	BRIEF PARTICIPANTS The chemical sector covers any site holding named chemicals (e.g. chlorine) or generic categories of chemical (i.e. toxic, highly flammable or explosive). Types of site include: • oil refineries; • calor gas sites; • chemical warehouses; • chemical manufacturing; • water treatment works; and • other types of manufacturing where chemicals may be used. There are 1,100 such sites across the UK, 340 of which are top-tier. Accident rates are not that different to other areas of heavy industry. Does this change your views on the dangers? On a scale of 1 to 10, how dangerous is the chemical industry? Why do you say that?

Gas supply network	What do people think are the dangers of this sector? PROBE FOR: what could go wrong? On a scale of 1 to 10, how dangerous is the gas network? Why do you say that? USE FLIP CHART TO RECORD KEY RESPONSES ON THE SECTORS
	BRIEF PARTICIPANTS *The gas supply sector covers the whole network from where it starts at the beach terminal (for piped supplies) or the import terminal (for imports by ship), until the consumer control valve next to the gas meter. It does not cover appliances inside the house, gas transport (by road or rail) or gas storage (this is covered by COMAH).* *There are 276,500 km of gas pipeline in the UK, and 1.35 million reported gas escapes per year. In 2002/03 there 32 reported gas fire and explosion incidents in the UK and 5 employee deaths. The majority of incidents are caused by drilling into the pipeline.* *A safety issue, in terms of major hazards, is keeping the pressure within the pipeline constant. If the pressure drops there can be explosions in homes and other places where the gas is used. To avoid this danger a pressure drop would result in supply being shut down in the affected sections. For constant pressure to be maintained supply and demand must balance. The UK has maintained this balance because we do not store gas, we generally use it as it comes into the pipeline network, it's effectively stored in the North Sea. However, this may become more of an issue now that we will be importing gas in batches and storing it because North Sea gas is running out.*
	Does this change your views on the dangers? On a scale of 1 to 10, how dangerous is the gas supply network? Why do you say that?

Offshore EXPLAIN: This covers oil and gas extraction in the North Sea on rigs.	What do people think are the dangers of this sector? PROBE FOR: what could go wrong? On a scale of 1 to 10, how dangerous are offshore installations? Why do you say that? USE FLIP CHART TO RECORD KEY RESPONSES ON THE SECTORS
Safety issues revolve around the operator's ability to control and maintain wells as they drill, and contain the gas and oils in the process. The main risk factors are the harsh environment and collision. Piper Alpha explosion in 1988 which caused 167 deaths. New regulation was introduced as a result of this accident.	BRIEF PARTICIPANTS The offshore gas and oil sector covers both production installations (which may be fixed or floating) and mobile exploration installations. The sector employs 185,000 people an approximately 20,000 work out on the rigs. Over the last 10 years, there have been, on average, 2-3 deaths and 54 major injuries amongst workers per year – mostly "ordinary" heavy industry type accidents Does this change your views on the dangers? On a scale of 1 to 10, how dangerous is an offshore installation? Why do you say that?
Major hazards	So how would you rank these four sectors in terms of danger to the public now? And is the order different for employees? If so, why?
	HSE refers to these sectors as 'major hazards'. Are there any other sectors you think are similarly dangerous? PROBE FOR LIST AND WHY THESE SHOULD BE ADDED, IF ANY ARE
HSE defines a major hazard sector as one with: • highly complex safety systems • relatively mature approaches to safety • the potential for incidents that would be entirely unacceptable to society.	ASK PARTICIPANTS How would you define a major hazard?
A **major accident** is an occurrence (including in particular, a major emission, fire or explosion) resulting from uncontrolled developments in the course of the operation of any establishment leading to serious danger to human health or the environment, immediate or delayed, inside or outside an establishment, and involving at least one dangerous substance.	

Criteria WE ARE LOOKING FOR CRITERIA WHICH HSE COULD USE TO ENSURE THAT THEIR INSPECTION REGIMES MEET PUBLIC EXPECTATIONS THIS WILL NEED TO BE PLAYED BY EAR DEPENDING ON THE CONVERSATION SO FAR	What would you expect HSE to do to enforce the health and safety regulations in these sectors? What do you think they do? What would reassure you that firms in these sectors are complying with the regulations? What should HSE be doing that would make you feel confident that these sectors are complying fully with the regulations? GENERATE LIST
PUT PARTICIPANTS IN THE POSITION OF REGULATOR.	If you had to make sure that these types of sites were safe, what would you do? What would you want to know about the site? What about how it is managed?

Existing regimes All four major hazard sectors are regulated by a "permissioning" system. This is an extra level of control over and above standard health and safety regulation of workers. A permissioning regime requires certain hazardous work activities to have some form of "permission" from the safety regulator before operations can start or continue. That "permission" might be a consent, license, letter of conclusion or acceptance of a safety case or safety report by the safety regulator. That means a duty holder cannot work without documenting the hazards, risks and control measures to the satisfaction of the safety regulator. Normally a charge is levied on those granted permission because of the resources used by HSE.	EXPLAIN PRINCIPLES OF PERMISSIONING ACROSS ALL FOUR SECTORS
Licensing	BRIEF PARTICIPANTS *The Nuclear Installations Act decrees that no company can build or operate a nuclear installation without first obtaining a license from the HSE.* *There is a standard set of conditions attached to each nuclear site license. These conditions define the key areas which encompass the management of safety and each licensee is required to demonstrate its arrangements for complying with these conditions. Every activity, from design through to final decommissioning, must be undertaken in accordance with the conditions HSE attaches to the license.* How much trust would you have in this regime for regulating the nuclear industry? Why? PROBE FULLY AND RECORD ON FLIP CHART
COMAH KEY ISSUE IS TO EXPLORE VIEWS ON EXTERNALLY IMPOSED CONDITIONS V OPERATED IDENTIFIED RISKS.	BRIEF PARTICIPANTS *Control of major accidents hazards (or COMAH) is the way in which the handling of chemicals is regulated. The regulation is set by the EU. COMAH covers environmental impact as well as health and safety.* *Sites covered by COMAH have to prepare and keep a major accident prevention policy document (MAPP for short). Such a document sets out the company's policy with respect to the prevention of major accidents. It includes*

	a description of the safety management system for achieving the stated aims. Training records, internal site inspection records, audit reports, operating procedures, risk assessments, etc. *Higher tier establishments also have to prepare a safety case.* *A safety case is a document where the company identifies the main hazards, the likelihood of them happening and the measures in place to eliminate or control and mitigate them.* How much trust would you have in this system for regulating the chemical industry? Why? PROBE FULLY AND RECORD ON FLIP CHART
EXTRA BACKGROUND FOR FACILITATOR In 2004 there were 340 top tier sites and 660 lower tier sites. More establishments are being brought into scope with the full application of COMAH to explosives and the extension of the dangerous classification to other substances.	

Offshore ADDITIONAL NOTE FOR MODERATORS Offshore installations have an additional need to be "self-sufficient" when it comes to dealing with emergencies because of their location.	BRIEF PARTICIPANTS *The Offshore Installations (Safety Case) Regulations (1992) require operators and owners of offshore installations to submit safety cases to the Health and Safety Executive (HSE) for acceptance as a condition of operating in UK waters. The safety case identifies major hazards, how they have been reduced and the management structure. Once accepted the safety case is reviewed every 3 years, or if a significant change to the operation is made.* How much trust would you have in this regime to ensure that offshore is safe? Why? PROBE FULLY AND RECORD ON FLIP CHART
Gas ADDITIONAL NOTE FOR MODERATORS The gas network is harder to inspect since it is underground.	BRIEF PARTICIPANTS *Under the Gas Safety (Management) Regulations (1996), any company who wishes to operate a gas network must first submit a safety case to the HSE, which must be reviewed at least every 3 years.* How much trust would you have in this regime to ensure that gas pipelines are safe? Why? PROBE FULLY AND RECORD ON FLIP CHART
Comparison of regimes	Do you think these four sectors should be regulated differently? Why?/Why not? EXPLORE IF THERE ARE 1, 2, 3 OR 4 GROUPS WITH RESPECT TO H&S REGULATION IN PEOPLE'S MINDS. What are the reasons for this? EXPLORE THE LOGIC BEHIND THIS
Criteria WE NOW WANT TO DISTIL SOME CRITERIA AGAINST WHICH TO DECIDE WHETHER EACH OF THESE SECTORS IS BEING REGULATED APPROPRIATELY, THAT IS WITH THE RIGHT LEVEL OF RESOURCE, THE RIGHT REGULATOR WITH THE RIGHT EXPERTISE, TO ACHIEVE WHAT THEY WANT – THAT THEY WOULD TRUST THESE CRITERIA WILL BE USED TO ASSESS HOW EACH SECTOR SHOULD BE REGULATED SO THAT PEOPLE HAVE FAITH/CAN BE CONFIDENT THAT REGULATION IS APPROPRIATE THE CRITERIA WILL BE REFINED BY PSP BETWEEN THE SESSIONS	FROM WHAT HAS BEEN RECORDED TRY TO IDENTIFY CRITERIA. THINGS TO LOOK FOR/ASK ABOUT: 1. What sticks need to be in place – inspection, prosecution, closure, prison, fines? 2. What carrots need to be in place – guidance, funding, licence to operate? RECORD **WHY** THE CRITERIA HAVE BEEN SELECTED. CHECK WHETHER SOME CRITERIA HAVE BEEN SELECTED FOR CERTAIN SECTORS ONLY OR FOR THE PUBLIC OR EMPLOYEES ONLY

Overriding risk perception	Even if all these factors were in place, what do you think are the chances of a major incident occurring nevertheless?
Role of HSE versus third party enforcers	What should HSE be trying to achieve? THIS WILL BE PICKED-UP IN THE NEXT SESSION Is HSE the best organisation to do this? Who would you trust to oversee these sectors? What sort of expertise would an organisation need? What sort of organisation would be best? Public sector? Private sector? Why do you say this?
Geography This is something for participants to think about for the next session.	At what level should action be taken – local, regional, national, European, international.
Priorities	TRY TO IDENTIFY PRIORITIES FOR PARTICIPANTS. How important is regulating these sectors compared to other things? Like crime, terrorism, education? What really matters to you? Where should the Government be putting its priority/budget?
Resources EXPLAIN: About £45 million of HSE staff resources is allocated to ensuring the safe operation of these four sectors. This is over a fifth of HSE's total budget. THIS IS SOMETHING FOR PARTICIPANTS TO THINK ABOUT FOR THE NEXT SESSION.	How would you allocate this budget? How would you divide the budget between these four major hazards? What about the costs to industry of compliance? The impact on jobs and UK manufacturing? We will look at trade-offs between the four sectors and between control regimes and costs in the next session.
Close	Thanks very much to everyone for coming. We will be meeting again on DATE, here in a larger group of XX people. People from HSE will be joining us to give more information about the sectors and the regulatory regimes. We will write to you a bit nearer the time confirming everything but we plan to start at 6.30 and finish at 9.30 with a short break for refreshments in the middle.

APPENDIX 5 –SECOND SESSION TOPIC GUIDE (SAMPLE 2)

Aim The overall aim is to explore whether or not there are general principles that the public identifies in determining the level of scrutiny required on major hazard sites to provide assurance that the potential risks and hazards are under adequate control. This control may be through regulation and external inspection, good practice guidance and internal management practices, or some combination of these. Identifying these principles will involve exploring attitudes to different types of hazards and probing for underpinning values and how these might affect general principles associated with the management and control of major hazards.	
Preparation In advance of the session prepare mapping documents for each sector with the 11 elements and 5 trade-off statements, leaving blanks for extras participants might want to add.	
Introductions 1. Introduce PSP and HSE staff 2. Round robin of introductions from the public participants 3. Reminder of the objectives of the project and outline of the evening	6.30-6.40
First pen picture – COMAH Day in the life/how I got to where I am, short descriptions by HSE representatives from each sector in turn to give picture of the nature of the work in each sector and what activities are covered by the regulatory regime and what operating organisations need to do. The pen picture will be followed by an opportunity for participants to ask questions	6.40-6.50
Introduce multi-criteria analysis From the descriptions that participants gave of the elements of a regulatory regime, we have distilled a set of elements (criteria) that a regulatory regime might include. We have also added elements of the existing regimes. 1. Named operator staff responsible for safety systems 2. External checks that systems are in place 3. External checks of machinery/buildings/etc 4. External monitoring of emissions (air, land and water) 5. External check that drills take place 6. Good track record means fewer external checks 7. Publicly accessible reports on incidents with lessons learned 8. Inspectors technically expert in the field 9. Independent inspectors 10. Prior permission to operate 11. Companies pay to be inspected Other – please write in if you think there's anything else we have missed and that should be an important element of a regime 12. Rotation of inspectors versus knowledge of site/operator 13. Private sector versus public sector inspectors 14. Unannounced versus scheduled inspections 15. Targeted inspections versus general inspections 16. Employee safety versus public safety	6.50-7.05

Present these to participants and get their agreement that all these should be covered, giving the opportunity to delete any, and ensure that there are no others they want to include. Explain that we will be examining elements for each regime separately after hearing from each HSE representative Make sure to include elements for verification, don't let participants cross things off because what they have heard from HSE representatives leads them to think they are covered by the regimes. The aim is to find out if participants regard the factors as important <u>whether or not</u> they are addressed in current regimes. For 1 to 11 participants are to score the importance of each element on paper, on their own, using the sheets provided. Add 'other' if relevant. For 12 to 16 participants are to trade-off between the two ends of the spectrum, with the mid-point score meaning both are equally important. Ask participants to complete first set of documents for COMAH.	

Remaining pen pictures and mapping Day in the life/how I got to where I am, short descriptions by HSE representatives from each sector in turn to give picture of the nature of the work in each sector and what activities are covered by the regulatory regime and what operating organisations need to do. Each pen picture will be followed by an opportunity for participants to ask questions before and whilst completing the mapping document. So far the nuclear sector has provoked more questions so we propose to run this as the last of the four in order to provide flexibility over timing.	7.05-7.20 Offshore 7.20-7.35 Gas 7.35-7.50 Nuclear
Break – buffet Split participants into two original groups from first session during break	7.50-8.00
Reconvene 2 members of HSE team to sit with each group. Swap groups at 8:30. Thank you for filling in these scores, we will add these to all those we have from other groups. We now want to consider some things in more detail. **Who should be doing what?** THE FOCUS OF THE REMAINDER OF THE SESSION IS TO PROBE AND EXPLORE EMERGING UNDERLYING PRINCIPLES SUCH AS PHYSICAL INSPECTION, INDEPENDENT INSPECTION AND TO SEE WHETHER THEY ARE COMMON ACROSS GEOGRAPHIC AND SOCIO-ECONOMIC GROUPS. Having named staff responsible for health and safety seems to be very important to people, what level should this be at? Should this be at director/board level, middle management or does everyone carry responsibility? Is this more than one person? Is this a specific job or part of a job? Why is it important to have named staff? *With the "Hatfield" trial currently underway the issue of corporate manslaughter may arise – should a member of the board of directors be personally responsible for health and safety and therefore be personally liable to be charged? This is complex and while people should be allowed to air their views if it arises, there is not time to follow-up.* Checking that certain things have been done is seen as important by everybody. We want to talk in a little more detail about what should be checked and by whom. For the following aspects of a regime, looking to see a) who should do it and b) whether there should be external checks and the nature of such checks e.g. on paper or through physical inspection. PROBE FOR DIFFERENCES BETWEEN THE REGIMES/SECTORS. Checks on: • Systems • Machinery/building • Training • Emissions • Drills Which, if any of these, should be done by the operator? • e.g. should the company check levels of emissions the site? Should there be a requirement on the operator to report what they've done in terms of checks? Should the operator decide what they check and what to report?	8.00-8.50

PROBE FOR DIFFERENCES BETWEEN REGIMES IN WHAT IS REQUIRED	
Who should they report to, if anyone – is HSE most appropriate organisation? PROBE FOR ANY OTHER RELEVANT ORGANISATIONS OR TYPE OF ORGANISATION Should HSE (or other organisations if identified above) physically check what the operator has done and if so, in what detail? • i.e. paperwork versus physical checks • general versus targeted • how often • unannounced versus scheduled Explore views on who should be inspecting. • same inspectors or rotation • PROBE for issues of 'independence' – what does independent mean? • PROBE for issues of 'expertise'- what sort of qualifications should inspectors have? E.g. (this arose as an example) Can a gas fitter be an inspector? Explore views on private sector inspections e.g. subcontracting model of MOT system; insurance companies; private sector as part of HSE teams • Probe for understanding of 'public' and 'private' sector What information should be publicly accessible • Probe for who should publish – HSE or operator • Probe for whether there should be a summary in lay language In these major hazard sectors should the onus be on protecting workers, the public or both? PROBE FOR WHY SPECIFIC ANSWERS GIVEN.	
Punishments and Reward What should happen if a problem in the safety case is found? In what circumstances should HSE • Take any form of action • Shut down operations temporarily • Shut down operations permanently • Take legal action – what do people understand by taking legal action/prosecution • Levy fines, and how large (ONLY POSSIBLE THROUGH THE COURTS AT PRESENT) Are other sanctions appropriate? PROBE FOR WHETHER IT IS THE SAME FOR EACH SECTOR?	8.50-9.05
What should happen if something is found to be or goes wrong? In what circumstances should HSE • Take any form of action • Shut down operations temporarily • Shut down operations permanently • Take legal action • Levy fines, and how large (ONLY POSSIBLE THROUGH THE COURTS AT PRESENT) Are other sanctions appropriate? PROBE FOR WHETHER IT IS THE SAME FOR EACH SECTOR? Examine whether good track record should lead to fewer external checks and the corollary that bad track record means more external checks	

Costs Who should pay for all this? • Companies? • Tax payer? Should smaller companies pay different rates (e.g. chemicals)	9.05-9.10
Final Ranking Bring two groups back together in plenary. Ask participants to rank on their first sheet the top five elements that any regime would have to include. Round robin of everybody's No. 1. Record on flip chart Get participants to shout out any other elements that are also in their top five, but that haven't been included so far. Record on flip chart Probe whether it would be different for different sectors, if so, why? Ask HSE to comment	9.10-9.25
Conclusion Give any information about publication of report and web access. Thank and close the session and pay participants.	9.25-9.30

APPENDIX 6 – MULTI-CRITERIA ANALYSIS DOCUMENTS

These documents were completed by each respondent working alone for each of the four sectors separately.

	How important?
1. Named staff responsible for safety systems	**Low ---------- High**
2. External checks that systems are in place	**Low ---------- High**
3. External checks of machinery/building	**Low ---------- High**
4. External monitoring of emissions (air, land and water)	**Low ---------- High**
5. External check that emergency drills take place	**Low ---------- High**
6. Good track record in safety means fewer external checks	**Low ---------- High**
7. Publicly accessible reports on incidents and lessons learned	**Low ---------- High**
8. Inspectors technically expert in the field	**Low ---------- High**
9. Independent inspectors	**Low ---------- High**
10. Prior permission to operate	**Low ---------- High**
11. Companies pay to be inspected	**Low ---------- High**
Other (please write)	**Low ---------- High**

Trade-offs

12. Rotation of inspectors	----------	Same inspector, knowledge of site/operator
13. Private sector inspectors	----------	Public sector inspectors
14. Unannounced inspections	----------	Scheduled inspections
15. Targeted inspections	----------	General inspections
16. Employee safety	----------	Public safety

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