

MANAGING EMERGENCIES; THE ESTABLISHMENT OF A COMPETENT RESPONSE

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This paper presents the lessons learned during a project designed to establish a system for real time access to competent personnel during emergency situations. Invocation of an emergency plan does not reduce the legal or governance demands which apply to companies, their employees and contractors and decisions made in complex high-pressure situations still require the same degree of professionalism and control as those made during normal business operations. These decisions will however be subject to a higher degree of scrutiny through post incident investigations and a higher likelihood of engagement with a legal process seeking criminal and civil redress.

Added to which a significant number of major events are of long duration; they are not handled during a single shift and need access to replacement teams in addition to specialist knowledge at various times during the event. The numbers of personnel involved can be significant and the third shift needs to be as well prepared as the first.

As part of the project, competencies were established for a range of roles relating to offshore oil and gas, covering both drilling and production. These addressed both the day to day role of the individual combined with their emergency roles which included role specific elements as well as those arising from the team performance under high stress conditions.

In order to achieve the objectives, a system was established which provided management oversight of the status of the emergency arrangements, allowing the competence of personnel to be continually monitored and maintained.

KEYWORDS: Competence, Emergency response, Response Management

Multiple teams, multiple locations and a wide variation in risk factors serve to drive complexity when planning for and responding to crises. All response systems rely on people and their effectiveness influences the outcome of the response to events. When a response organisation is triggered following an incident, access to the right skills and knowledge is critical.

This paper examines the development of a system to provide real time management of a response organisation, where the current capability and effectiveness can be monitored on a routine basis and which when activated provides an auditable trail for the competence of personnel against the response roles as well as additional support for access to specialist knowledge.

Often the linkages between governance and capability of response are weak within organisations; there are plans, facilities and personnel in place but it is difficult to demonstrate how effective the arrangements are and knowledge of the numbers of personnel to support critical functions can be difficult to obtain.

Within the definition of the project, operational control over the competence of personnel to fulfil roles in the response plans tied with capacity, status and capability of team issues were identified as key drivers for establishing monitoring arrangements. Additional factors which influenced the project were:

- Recognition that in extreme events there are high demands for support personnel as well as specialists. Identification and access to these is often difficult to

achieve and the experience of the personnel in emergency situations can be variable. This can lead to situations where individuals without the necessary experience, skills and knowledge have to be used.

- Establishment of a management system which allowed monitoring of the current status of the response organisation and which in the event of an invocation could act as a means of ensuring that adequate numbers of competent personnel were available or could be placed on standby to assist with long duration or complex events.
- Realisation that, historically, internal controls were in place to ensure key roles were allocated to suitable personnel, these were in effect local mechanisms by which duty personnel and nominated roles could be covered. The extent to which competence could be demonstrated across the wider response organisation and the availability of cover for roles were dynamic issues. At single site or team levels the traditional rota systems functioned but there was limited forward assessment of capability and as the numbers of teams, locations and complexity of the organisation grew, the capability became more opaque and difficult to assess.

Organisations recognise that risk registers continually change and that they face “Black Swan” [Ref 9] situations where unforeseen events drive the need for flexibility in the response organisation and access to specialist skills with knowledge of key areas, and what was needed was a dynamic real time capability to oversee crisis response.

Increasingly companies are being asked to account for their actions, the drive towards governance, the regulatory frameworks in countries and the expectations of media and corporate stakeholders require organisations to not only be capable of managing and responding to events but to be capable of demonstrating pre and post event the capability of the organisation.

The combination of these factors contributed to the scope of the project which also included the need to be able to demonstrate both current and post incident competence for responders. In effect the scope was to establish a system which was capable of:

- The daily monitoring of effectiveness of the response arrangements with regards to personnel with allocated roles.
- The ability to respond in real time.
- The establishment of systems for the demonstration of competence in emergency and crisis roles.

For operators of major hazard sites the application in Europe of the Seveso directives includes the need for competence in critical roles. HSE Research report 086 [Ref 10] which examined competence assessment for the hazardous industries states:

Organisations operating high-hazard plant recognise that safety is predicated upon the experience, commitment and competence of their staff. The COMAH regulations and the lessons learnt from major incidents indicate that it is not enough to assume that exposure to training and experience assures competence.

In terms of the competence elements of the system, the definition of competence was taken from the Offshore Petroleum Industry Training Organisation (OPITO) which defines competence as “possessing the necessary skills, experience, knowledge and attitude, and being able to apply them in a particular work environment to perform defined tasks to a predefined standard.”

The HSE report [10] suggests that competence is commonly regarded to be the ability to perform the activities within an occupation or function to the standards expected in employment. This definition makes reference to standards, which in the context of COMAH competence, is the continuing ability of individuals and teams to perform reliably the Major Accident Hazard elements of their roles, responsibilities and tasks, and for this to be demonstrable. Such roles of course include the ability to respond to and manage a wide variety of risks including the handling of emergency situations.

Case studies which are often referred to in the literature for the high hazard industries include Piper Alpha, Esso Longford, Three Mile Island all which illustrate root causations which include links to individual competencies. However the requirements for competency assurance systems are not restricted to high risk industries but can be applied to all work locations. In 2007 the retailer New

Look had a fire in its Oxford Street branch, no one was injured but the organisation was prosecuted for breaches of the Regulatory Reform (Fire Safety) Order 2005. The prosecution raised a number of issues regarding the training and competence of staff in emergencies.

Thirty fire engines and around 150 firefighters were needed to tackle the blaze and crews remained at the scene for the next three days. The first call to the Brigade was not from a member of staff but from an office worker in an adjacent building. This delay meant that when crews arrived the fire had already developed and had broken through the second floor windows. Over 450 people evacuated from the store and surrounding premises.

There were a number of significant breaches including the charge that there was insufficient training of staff which led to a delayed evacuation of the premises and staff being ill prepared to respond to a fire or fire alarm signal. Staff did not use the appropriate fire exits to evacuate the public which meant that approximately 150 people were evacuated through the main entrance which was directly underneath the fire on the second floor.

There had been staff training but this not considered to be adequate and New Look failed to demonstrate that the staff were competent in their duties.

Where emergency duties are placed on individuals, a key question to be answered is what are the additional requirements beyond competency in their “day” job and knowledge of the response procedures? Research indicates that there are a significant number of differences not only in the knowledge and skills required but in the understanding of how individuals perform in high stress environments.

According to Kerstholt [7], decision making behaviour is considerably affected by the dynamics of environment, because most natural dynamic situations contain much uncertainty. He notes that a dynamic situation continually changes and, thus, a decision maker has to take temporal changes into consideration. The decision making process is different in high stress environments Dorner and Pfeifer [5] found that stressed subjects focused on the general outline of the problem, while non-stressed individuals relied on in-depth analysis. The centre for process safety identified a number of phenomena which occur under stress, such as rigidity of problem solving and polarization of thinking, making individuals more prone to error.

The interrelationship of variables and the complexity of emergency situations combined with the demand for instant response and the desire for accuracy, all affect performance and contribute to a difficult environment in which the individual must perform. The development of competent standards for an emergency role must take into account not only the elements of core knowledge relating to the position but also the related demands of leadership, command and control and team working in stressful environments.

In order to establish a system which provides for real time access to competent emergency personnel, two distinct

areas of development were identified. The first addresses the establishment of a management system for access to nominated personnel with defined roles in an emergency, crisis or business continuity setting whilst the second area relates to the establishment and maintenance of competence i.e. a competence assurance system. In effect the project centres on the ability to integrate these requirements to provide up to date KPIs relating to emergency capability with real time access and competence assurance.

What has been established is an organisational system, which has adapted an existing competence assurance system known as "Skills XP", which has the capability to match individuals against competence in allocated roles with a response management process. This assurance system has been proven in the drilling and offshore oil and gas sector where it provides a HR and operational tool for managing competence assurance. As part of its application into these sectors the competence profiles for critical jobs have been developed and are continually reviewed and updated.

In summary a competence assured workforce is one in which the employees know what is expected of them to be competent in their role and where their competence is assessed. With regards to emergency response, the individuals will achieve competence through appropriate learning events, participation in exercises and where appropriate, observation in scenario based tests.

The approach taken was to capture this information on an IT system which would allow monitoring through a number of KPIs:

- Percentage of people competent compared to plan, by facility, region, company
- Percentage of individual competencies achieved and report on gaps by exception
- Expired competencies and competencies that are due for expiry
- Minimum site competencies required per facility and gaps.

What was needed for the project was to extend this capability to match individuals with the organisational systems for response; in effect matching existing plans and arrangements against the individuals nominated to fill the emergency roles across the organisation. But this needed to be dynamic; a snapshot only of who is available today would not meet the project objectives. The resulting system, which integrated emergency plans and arrangements into a competence assurance system, resulted in:

- The capture of team and role definitions from the organisations response documentation, this includes the ability to cover corporate, regional and site locations.
- Information on individuals assigned to the roles, including for critical roles the minimum numbers which could be required to support a particular team.
- Competence profiles for each role which are agreed with the organisation and relate to the appropriate national or international standards.

- Competence assurance through defined company requirements for training, assessment and exercising.

The resulting package provides real time monitoring of the current and future capability of the organisation. By defining KPIs it has become possible to monitor across the organisation areas of concern. Minimum numbers have been defined for key roles for example and where training and assessment is needed this can be planned. Participation in exercises and the dates for review of plans and audits are also held within the database and can be displayed in a dashboard.

In addition an important feature of the system is its ability to search for personnel with specialist knowledge or experience allowing a fast response with assurance of competence.

CONCLUSIONS

The project sought to establish a system which allowed management control and oversight of the emergency response capability and capacity across multiple teams and locations. This has been achieved by creating a system which monitors the status of the response arrangements alongside competence assurance of the key personnel.

The system also provides an auditable trail that can be used to monitor the competencies of the teams and individuals and it is used to establish plans for training and exercises. By monitoring individuals against their roles in the emergency procedures it avoids situations where personnel fail to maintain their competencies. It allows multiple sites and multiple teams to be maintained with real time access to information on competency that ensures those charged with responding to the event have the necessary skills and authorisations to handle the event.

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