CALL FOR PROPOSALS

Operational Experience Feedback and Industrial Safety

I. Rationale

Operational experience feedback, or the analysis of lessons learned, is widely acknowledged to be a key element in efforts to improve industrial safety. It consists of identifying anomalies, deviations from nominal behaviour, near-miss events and accidents; in analyzing their causes; in defining corrective action programmes or remedial measures to ensure that they will not occur in the future; and in disseminating the lessons learned to all interested parties.

This definition of operational experience feedback and its importance in learning from unexpected events related to safety (incidents, quasi-accidents, accidents, etc) are generally agreed upon. However, recent research work suggests that, in practice, a number of factors hinder the effective implementation of operational experience:

- Tension, conflicts, and even crises that can be triggered by the analysis of operational feedback, both internally due to problems related to individual or collective attribution of blame, and externally due to the way in which various actors – the judiciary system, the media, associations, etc. as well as regulatory bodies, expertise agencies, competitor companies, insurance companies – can perceive and use the results of operational feedback activities;

- The difficulty in developing a global approach to operational feedback that encompasses both technical aspects of the issue and human and organizational factors, that are more difficult to quantify;

- The difficulty in developing procedures for operational feedback analysis that overcome an organization's inertia and ensure effective application of the lessons learned (generating changes in the company's activities, in its organization);

- The difficulty in maintaining organizational learning activities in the long term, by stabilising the procedures and structures used to implement these activities (due to the difficulty in maintaining a permanent, durable activity on safety-related issues) ;

- Obstacles to the sharing of experience and lessons learned beyond each individual company (with subcontractors, with companies in the same activity sector, with regulatory bodies, with the general public).

Numerous and diverse, these constraints have hindered the development of operational feedback and organizational learning activities. In certain cases they have had a braking effect; in others they have led to experimentation of new, innovative forms of operational experience feedback. Certain companies are attached to the use of "positive" operational feedback, concerning the organization's successes as well as its failures. Other companies are turning to "qualitative" operational feedback, which focuses on events or problems that are seen as being the most likely to inform and mobilise employees around safety-related issues. Some organizations tightly link operational experience feedback to quality assurance activities. Finally, certain companies are participating in experiments initiated by researchers, investigating the implementation of alternative approaches to operational feedback to ensure safety in the company.

Other subjects being considered include the possibility of transforming operational feedback activities into a concertative mechanism for public discussion regarding industrial risk (given the increasing participation of representatives of society in this debate); on the possibility of integrating operational feedback (which is mainly intended to allow incremental evolution and improvement) into major changes to an organization (that are generally seen as being strategic decisions); on the relationship between operational experience feedback and technological innovation (that is generally considered to be a research and development activity).

Experiments into various forms of operational feedback, the exploration of alternative approaches, are rich and diverse, as are considerations aiming to make operational feedback a possible base for social concertation and even innovation. However, we have only a limited view of what operational feedback activities companies are currently being used by companies, and the areas where they are investigating alternatives. Despite discussions on the subject in forums such as professional workgroups, knowledge about this subject is insufficient.

The discussions carried out in workgroups organized by the Institute for an Industrial Safety Culture (ICSI) have highlighted a certain number of themes where research could improve the current level of understanding:

- The socio-cultural factors that influence the success of operational feedback activities;

- The relationship between operational experience feedback and responsibility (the link between errors and blame, both inside the company and with respect to regulatory bodies);

- The potential for operational feedback to improve information, communication and concertation, both in a company's internal activities, and in its relationship with the outside environment.

These themes are related to subjects such as:

- Categories of operational feedback and organizational learning techniques: preventive (accident precursor analysis), corrective, positive (promotion of best practice);

- Domains covered by operational feedback (regulatory aspects, workplace accidents, major risks, organization by professional category or by technical domain...);

- Management of operational feedback activities (types of events that are concerned, people involved, use of databases, indicators);

- Foundations of lessons-learned analysis, and aspects that make it effective and viable in the long term (political aspects, values and objectives of the company and the site on safety issues, organizational issues, technical aspects, procedures used);

- Evaluation of operational experience feedback and organizational learning (criteria for assessing the success of failure of the activities).

The aim of this call for proposals is to attempt to remedy this situation by inviting researchers to analyse and compare different practices and experiments, by identifying elements that contribute to an improvement of the efficiency and effectiveness of operational feedback activities, or of alternative approaches for organizational learning. A first objective of this work is to improve industrial safety, by improving our knowledge of the manner in which operational feedback activities are implemented in practice. A second objective is to investigate manners in which operational feedback activities can help respond to the different expectations of society with respect to high-risk industries.

II. Method

In order to attain these objectives, the ICSI has put in place an original method that aims to generate a novel type of interaction between researchers and industry. Researchers from different scientific disciplines (human factors, engineering, informatics) are expected to carry out detailed fieldwork, analyzing the political and organizational dimensions of operational experience feedback and the different methods and procedures for organizational learning that are used or tested in industry.

This implies taking into account the way in which operational feedback is carried out in the field; identifying the different political choices made and the historical context (taking into account the constraints mentioned in Section I); identifying the criticisms and questions of actors who are responsible for operational feedback activities (design, implementation, evaluation, etc); attempting to classify different forms of operational feedback into categories; participating in a comparative analysis of observations made on the different industrial sites with other research teams; working with experts to transfer the results of research to industry, ensuring the link between research and action (for example by identifying positive or negative factors for the effectiveness of operational feedback, as well as negative factors).

We expect of industrial partners that they open industrial sites to researchers, and allow them to collect the information necessary for their studies (by consulting documents, carrying out interviews with individuals and with groups of employees). Representatives of the industrial partners are also expected to participate actively in the various events where the results of the research will be presented, and to search for effective ways of transferring knowledge from researchers to experts.

The call for tenders sets out quite specific objectives for the research work:

- Produce knowledge (in the form of research reports, journal publications, summary documents) and identify the possibilities for transferring the results into practice;

- Participate in discussions on the modalities of transfer of the research results (either directly with experts from industry, or using intermediary experts who participate in the research process);

- Invent experiments that could test new forms of operational experience feedback or organizational learning, or increase the scope of these activities (for example extending the techniques to concertation activities).

The procedure for responding to the call for tenders is outlined below:

- Research teams send a document expressing their interest in the tender, including elements such as the names of researchers who could participate in the work; the investigative method and primary theoretical references; the way in which experts could be associated with the research project. Please use the attached Response Form to respond to the call.
  Deadline: 31 March 2005

- Preliminary selection of projects by the ICSI (based on assessment by its Scientific Steering Committee), selection of one or more industrial sites that are well suited to the proposed research, and allocation of an initial budget for a pre-study. The aim of the pre-study is to determine whether the research project is feasible and to reach a consensus with the industrial partners regarding the nature and modalities of the research work on site.
  Deadline: 1st May 2005

- Final selection of research projects, at the end of the pre-study, and attribution of a budget over three years.
  Deadline: 1st September 2005

The research projects shall be accompanied as follows:

- Creation of a Management Committee for each project, which will meet at each phase of the research project, and whenever the research teams deem appropriate. The Committee will be composed of members of the research team, industrial experts from the site, a representative of the ICSI, and other people chosen during the pre-study (such as a member of the site's Health and Safety Committee, a trade union representative, a representative of local government bodies …).

- Participation in work seminars in order to facilitate the exchange of viewpoints and the confrontation of ideas. These seminars will be attended by members of the Management Committees of each research project, and members of the ICSI's Scientific Steering Committee. After a first seminar at the ICSI (in Toulouse) which will allow an initial presentation of the state of research on operational experience feedback, and of the different research projects selected, these seminars will be held two times a year, rotating on the different industrial sites. They will allow the comparative analysis of the behaviours seen in the field with respect to experience feedback and organizational learning.

- For the research projects that are funded via a PhD grant, an interdisciplinary thesis committee will be put in place in order to accompany the student's research work. This committee will allow the student to benefit from an open and rich scientific

environment, and allow the exchange of viewpoints from different scientific disciplines.

At the end of the research work, the research teams will write a final report that will be discussed in a conference that will conclude the research project. This conference will be organized by the ICSI and will include participation from industry and research.