



## Strategies for dealing with resistance to recommendations from accident investigations

Jonas Lundberg<sup>a,\*</sup>, Carl Rollenhagen<sup>b,c,1</sup>, Erik Hollnagel<sup>d</sup>, Amy Rankin<sup>e</sup>

<sup>a</sup> Linköping University, Department of Science and Technology, Campus Norrköping, 601 74 Norrköping, Sweden

<sup>b</sup> KTH Royal Institute of Technology, Department of Philosophy, Stockholm, Sweden

<sup>c</sup> Vattenfall Power Consultant AB, Box 527, SE-162 16 Stockholm, Sweden

<sup>d</sup> University of Southern Denmark, Institute of Public Health, DK-5000 Odense C, Denmark

<sup>e</sup> Linköping University, Department of Computer and Information Science, 581 83 Linköping, Sweden

### ARTICLE INFO

#### Article history:

Received 16 January 2011

Received in revised form 9 August 2011

Accepted 22 August 2011

#### Keywords:

Accident investigation

Remedial actions

Safety culture

### ABSTRACT

Accident investigation reports usually lead to a set of recommendations for change. These recommendations are, however, sometimes resisted for reasons such as various aspects of ethics and power. When accident investigators are aware of this, they use several strategies to overcome the resistance. This paper describes strategies for dealing with four different types of resistance to change. The strategies were derived from qualitative analysis of 25 interviews with Swedish accident investigators from seven application domains. The main contribution of the paper is a better understanding of effective strategies for achieving change associated with accident investigation.

© 2011 Elsevier Ltd. All rights reserved.

### 1. Introduction

Accident investigation methods and practices is a classical and well-researched subject in safety science. Many different methods and models (Heinrich, 1934; Gordon, 1949; Lehto and Salvendy, 1991; Svenson, 1991; Knox and Eicher, 1992; Kjellén, 2000; O'Hare, 2000) have been suggested to support efficient accident investigation and new methods and models continue to emerge (see Hollnagel, 2004; Factor et al., 2007; Santos-Reyes and Beard, 2009). A main focus of current investigation methods is understanding why accidents occur, and on how to provide feedback to decision makers about the causes of negative events. Reflecting this situation, Swedish accident investigation manuals and investigation policy documents focus mainly on activities related to identifying causes and reporting them (Lundberg et al., 2009). In a recent report sampling 108 Swedish accident investigators, Rollenhagen et al. (2010) found the same tendency in self-reports on what kind of activities they spend the most time on.

Reflecting that accident investigations are often seen as rational processes of discovering causes, and then fixing the most important ones, there are aspects of accident investigation that have

received less interest than data collection and analysis. There has in particular been comparatively little research on the later stages of the accident investigation process where recommendations are formulated, communicated, implemented and assessed for their efficiency. For instance, documents meant to guide accident investigation in several domains in Sweden did not present much receive much guidance on how to go from analysis to recommendations (Lundberg et al., 2009). Rollenhagen et al. (2010) found that little time and effort were invested in suggesting recommendations relative to the time spent in data collection and analysis. An implicit assumption is thus that having identified and reported the causes, the work is basically done. Assuming that if only the causes can be found, then accidents can be prevented, then it would be reasonable to focus efforts on better analysis methods. However, other issues than weak analysis methods can derail investigations (Elvik, 2010; Lundberg et al., 2010) during all phases, even before having started. For instance, investigation resources, such as money or staff, can be lacking so that some kinds of investigations cannot be done. Moreover, some previous research suggests that important work remains after having identified causes. A particular finding, important to the theme of this study, was that accident investigators tended to adjust their investigation efforts, such as data collection, analysis, and design of remedial actions, to what they perceived to be “preventable causes”. That is, adjustments to what they perceived as possible to achieve rather than strictly what were the most critical factors identified (Lundberg et al., 2010). Moreover, a study of decision making in power plant has also highlighted that managers can select from the causes, rather than implement them

\* Corresponding author. Tel.: +46 011 363452; fax: +46 011 363270.

E-mail addresses: [Jonas.lundberg@liu.se](mailto:Jonas.lundberg@liu.se), [jonas.lundberg@itn.liu.se](mailto:jonas.lundberg@itn.liu.se) (J. Lundberg), [Carl.rollenhagen@vattenfall.com](mailto:Carl.rollenhagen@vattenfall.com) (C. Rollenhagen), [hollnagel.erik@gmail.com](mailto:hollnagel.erik@gmail.com) (E. Hollnagel), [amyra@ida.liu.se](mailto:amyra@ida.liu.se) (A. Rankin).

<sup>1</sup> Tel.: +46 08 5397260.