Call for paper

Risk Days

« Nuclear, Men and Society »

16th, 17th and 18th of November 2016- Cité des Congrès Nantes

First "Days of Risk" aim to bring together researchers and doctoral students whose work consists in human, organizational and societal challenges related to nuclear technology deployment. They will focus on risks affecting different stakeholders and features of the investigated fields.

Risk management has become a major concern in modern societies over the past few decades (Beck, 1986; Jonas, 1979). Enterprises and organizations followed have had the same evolution, particularly in the sectors using « high risk » technologies, i.e. shipment, chemistry, petrochemical and nuclear activities (Perrow, 1984). Organizational reliability and industrial safety are nowadays at the heart of the performance of these organizations. Since an accident can lead to far-reaching catastrophic consequences, reliability of these organizations is a prerequisite for their acceptability in their vicinity, as well as for obtaining operating authorization from the regulatory authorities. The crucial question here concerns the way manner in which reliability is added to the other dimensions of the performance, particularly economic, industrial, social and environmental dimensions. While being shared by all risk industries, these questions have been asked in a particularly acute way in the nuclear industry.

Initiatives had been taken by publically supported research institutions and by some industrialists. Risk days particularly rely on the RITE research chair (Pays de la Loire) and RESOH research chair (Areva, DCNS, IRSN) at École des Mines of Nantes. Days of risk are organized and designed in synergy with AGORAS (ANR) and NEEDS (CNRS) research programs.

Risk days aim to bring together these challenges around three themes:

1. Investigating the nuclear

2. Men and organizations as network: collective management of risks and industrial safety

3. Nuclear territories

Each of these themes is the subject of the three calls for contribution presented below. The symposium intends to be wildly opened and will be addressed to academic disciplines such as management, sociology, safety sciences, political sciences and ergonomics.

Risk days aim to involve young researchers. The first day is intended for doctoral students. It offers them the opportunity to share and discuss their works with researchers, lecturers, professors who are experts in these domains. Doctoral students' contributions are subjected to a selection process by a scientific committee to whom they are invited to submit their proposals.

Theme 1

« Investigating in the nuclear area »

Nuclear fact refers to multiple and complex realities that require the use of multiple «tricks » (Becker, 2002) for the researcher in social sciences in order to both identify the research object and investigate as close as possible to the site realities (Fournier, 2012). The aim of the first theme is to share practices by making relationship with the field more explicit. What are the modalities to access a nuclear plant, to a nuclear medicine service, to decommissioning installations? Could we investigate in the same manner each of these fields, or do they require particular postures and practices? What are the ways of interactions between researchers and players in the nuclear industry?

Axis 1: Nuclear worlds

It is often referred to "nuclear world", which implies to consider it as a monolithic or homogenous universe. However, it appears that this universe is characterized by various activities (designing, production, maintenance, dismantling, extraction, care…), plurality of places of work (factories, sites, medicine, research laboratories…), or even organizations (principal, sub-contractors or agents), professions and knowledge fields. That is why the concept of "nuclear worlds" with the meaning given by Becker (1982) and Strauss (1992), invites the reader to inquire about the factors that bring them together as well as the factors that distinguish them.

This axis addresses the following themes:

- How to characterize various worlds of nuclear and how to reflect their specificities?
- Despite a variety of activities, places and actors, is it possible to find similarities between all these worlds?
- How to address the articulation between the worlds of nuclear and other social worlds?

Axis 2: Conditions of dialog with the work field

When it comes to investigate the nuclear, questions arise about methodology in a more acute manner. Difficult access to the "worlds" of nuclear is one of their specific features, because of « safety » issues (operators, IRSN), professional, industrial or military confidentialities (operations and know-how). Therefore specific tools are required to unlock access to this field. Required tools include for example dimensioning of the relationship with the actors: partnership with operators or syndicates, "immersion", secondary data collection, etc. For these same reasons, the investigation requires permanent renegotiation of its own presence: "to go through hierarchies", to reassure fears, to give guarantees of neutrality and of "good faith". The last question concerns the shutdown of the investigation while restituting the results. Interviewed actors may seek to exercise control over results 'communication, differently in some fields.

- How to gain access to the wok field of nuclear organizations? What are the possible various forms of negotiations required to achieve this access?
- How to renegotiate his (her) presence during the investigation of the nuclear? What are the related challenges?
- How does the relationship in the investigation impact the modalities of restitution, and of the results?

Axis 3: Dialog between researchers and nuclear actors

This axis intends to bring together comparative views of social sciences, researchers and nuclear actors. It is about reflecting the way in which researchers and actors cooperate around a shared problem. What are the inputs of a social science research for the comprehension of the nuclear fact, how is the roles' sharing organized between researcher and his study sponsor? What are the outputs of the researches carried by researchers on the operators, syndicates or politicians?

Theme 2

"Human and organizations network:

Collective management of risks and industrial safety"

Human and organizational factors (FOH) play an increasingly important role in industrial safety. Significant progress has been achieved since the last three decades, by drawing on experience feedback based on the analysis of big accidents. Human status considered, on the individual level, as the missing link and source of mistakes so far, has evolved toward professional and collective bodies producing safety. Organizing and managing these issues which were not significantly addressed in the past, are nowadays receiving high attention, along with issues of deployment of the culture of industrial safety, irruption of the concept of resiliency and implementation of integrated process management tools.

Various theories have accompanied the evolution of the practices and the manners of thinking and considering industry safety. In this issue, HRO (High Reliability Organizations) theories shed light~~s~~ on social, communicational and organizational processes that enhance or weaken the reliability of high risk organizations. They stress the manner of work, interactions within professional and collective networks, as well as the decision making, in face of complex situations. It seems that HRO are reflexive and learning organizations that are continually in a self critical assessment.

These theoretical approaches consider industrial safety from a specific point of view: the duality and contradictions (Bourrier, 1996, Journé, 2004). The core aspect is the assumption of tensions existing throughout risk organizations, particularly in their relations with the unexpected (Weick and Sutcliffe, 2001). On one hand, everything must be done to remove unexpected events (rationale of anticipation); on the other hand, the organization must be able to cope with unexpected events (rationale of resiliency). This articulation is what both HRO and resiliency engineering are focusing on (Hollnagel, Woods and Leveson, 2006). This first tension between anticipation and resiliency is completed by a second tension between "rule-based" safety and "managed" safety (Daniellou & coll., 2009) which addresses the interaction between formal rules, on one side and real activity of professionals involved in matters of industrial safety, on the other side.

The symposium is part of these theoretical approaches and it aims ~~is~~ to clarify three points that are still misunderstood: (1) theoretical and concrete modalities of the articulation between resiliency and anticipation; between rule-based safety and managed safety, (2) the inter-organizational dimension of the reliability and (3) concrete enrolment of the reliability and safety within the game of other dimensions of the performance of risk organizations. Handling these three points raises numerous questions and calls for different analysis angles. This call suggests four perspectives:

Axis 1: sub-contracting and co-contracting relationships:

Sub-contracting is a classical practice which has significantly increased over the past few years, but whose outcomes are not sufficiently analyzed in the safety perspective. How is the high reliability achieved while calling upon sub-contractors that form an industrial "ecosystem" (Moore, 1993) which is also a "safety ecosystem"? This involves multiple issues: how to integrate sub-contractors in HRO reflexive processes (i.e. sensemaking and more broadly organizing)? How do different enterprises share safety culture? How to become collectively resilient? How to articulate both anticipation and resiliency? This analysis perspective is overlaid by managerial considerations, in particular the management of the sub-contracting relationship: how to select the subcontractors, how do mutual commitments arise? What are sub-contractors' expectations towards the buyer? How are they accompanied throughout the relationship, how are breakdown and tensions handled?

Axis 2: Management of complex projects and management tools:

Risk organizations operate increasingly on a project-mode. But HRO approaches provide limited latitude to project management and involve actors relatively stripped of management tools and systems though omnipresent. What are management tools and systems on whose actors rely in order to develop reflexivity and maintain vigilant interactions? With which tools can actors articulate these different performance dimensions? How is the articulation of various tools addressed? (Detchessahar & Journé, 2007)? This axis suggests to look further into various issues (discussion spaces (Detchessahar, 2001) and boundary objects (Star, 2010)). Planning's and contracts are at the heart of the tools used in this issue.

Axis 3: Dynamics of professional groups

HRO theories focus on expertise of individuals and groups, but often leave in the shadows identities and practices related to the profession. Despite their involvement in the work, these identities maintain complex relationships with the organizations that house them (Barley, 1996, Tillement et coll., 2009). This question is particularly raised in sub-contracting relationships and within project management. Thus achieving objectives of safety set by the organization largely relies on the role played by « boundary object » and intermediary objects (Vinck, 2009).

Axis 4: *Relationships controllers / controlled*

Safety's ecosystem incorporates relationships between industrials and actors of safety's governance (ASN and IRSN). However current theories do not sufficiently engage with the way in which interactions between safety's authority and operators enhance or weaken organizational reliability (Rolina, 2009). How is safety enrolled in the other dimensions of the performance? How are the tensions between « rule-based » safety and « managed » safety considered within the exchanges between controllers and controlled?

Theme 3

« Nuclear territories»

Theme 3 examines the intrinsic characteristics of the nuclear territories by looking on how the technology integrates in the inhabited space. This theme aims to understand the perception of risk in its territorial dimension (Zonabend, 1998) in order to go beyond the notion of "acceptability" of nuclear activities by the public.

Therefore, three research routes were proposed. It is a question of better understanding of the role of the memory and inheritances in risk management modalities (Bretesché, 2014, Labussière et Nadaï, 2013), the apprehension of risk frontiers by the territory residents (Douglas, 1980, Lafaye, 1999, Lemarchand, 2003), and identifying the new means of actions for the concerted environment (Brunet, 2004, Callon, Lascoumes, Barthe, 2001).

Axis 1: Territories and Borders

The notion of contaminated territory involves many sanitary, social, environmental, economic and patrimonial challenges. For each of these challenges, boundaries and zoning mechanism for the territory create conflicts between stakeholders. Within the limits (decisions) adopted by the authorities, a part of the territory, the grey area, where the consequences of contamination are severely experienced by the residents, is left out. Hence, the boundaries of the contaminated area are uncertain and dynamic.

This research line discusses in particular the following areas:

- Which consultation and decision making systems are utilized to define the boundaries of territories? Who are the actors, with which legitimacy?
- How are the criteria of zoning used, according to which data base, which tools and measure or assessment methodology?
- What are the consequences? To which extent and under which conditions are the zoning activities sufficiently robust in order to allow delimiting secured environment?

Axis 2: Territory Joint Management

Whether it is the result of accidents, waste management or taking charge of old uranium mines, the nuclear will leave its long-lasting imprints on the territory. This should include not only preserving current interests (sanitary, environmental…) but also interests of future generations.

How to approach a proper management for the territory in the long run? What are the interests and challenges that should be taken into consideration? What are the available possible options? Who are the stakeholders? What are the suitable methods that should be mobilized or invented?

Axis 3: Social Dynamic of the territories

The recent catastrophe of Fukushima or the earlier Chernobyl accident raise questions on the life on these territories. The restoration of a previous state without radiological risk is impossible over the human time scale. The radioactivity provokes a complete alteration for the ways of life and social relations whether for the evacuated people or the residents of the “grey zones”. What future is there for the populations? How to be protected from the daily radiological risk and how to rebuild social life conditions on those territories?

In other respects, the evidence of old uranium exploitation raises also questions regarding the mode of life in those old sites. Should they be ring-fenced? What activities are acceptable in a way to preserve the risk memory and the post exploitation remodeling aiming to remove all sites?

Paper Submission Deadlines and Procedure (for the three themes including doctoral works)**:**

- Abstract submission (1000 words) : **June 15, 2016**
- Notification of the review process : **July 8, 2016**
- Final paper submission (7000 words) : **October 17, 2016**.

Submission guidelines:

Abstracts (Times New Roman, caract. 12) must mention the selected theme, include a summary of up to 5 lines and up to 5 keywords. They must clearly reflect the following points:

- The aim and the problematic of the contribution
- The theoretical background
- The methodology
- The results and discussion
- A dozen references

Submissions should be sent by email to : **journeesdurisque@mines-nantes.fr**

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