

GISQUET Elsa

Tragic choices at Fukushima

The human dimension

- Tchernobyl and Fukushima accidents reminded us that workers could face dramatic situations.
- How were selected workers who perform the dangerous tasks?
- To Identify ethical principles to cope with tragic choices
- To propose reflection for guides in emergency situations according to ethical considerations

Tragic choices literature

- According to the Tragic Choices literature ([Calabresi and Bobbitt 1978](#)), there are two determining movements in tragic choices :



- 1) Ethical principles that may have guided the choices in the selection of workers
- 2) The circumstances in which those principles are applied.

➔ This will lead us to Identify various ethical strategies for facing tragic choices.

1 – Ethical principles (1/4)

- Earthquake + Tsunami = total station black out
- Be ready for venting and select the teams to perform it. While outside and even inside the MCR the radiation levels are gradually rising.
- The shift team leader first excludes younger operators. When nobody immediately volunteers, the shift team says that he would go himself.
- At that point, some of the more senior operators begin to offer to go, while at the same time insisting that the shift team needs to stay.
- The names of the senior and more experienced operators is written on the white board in order of age.
- Then they decide their partners and the order in which they go in. Those who have already been into the reactor building will be last to go back on the field.

1 - Ethical principles (2/4)



- Defined their own rules through a democratic process
- Maintain the social structures within their small working group
- The adaptability of workers has been preserved

1 – Ethical principles (3/4)

The ethical principles that have guided the choices :

- The “common good” was a fundamental principle in this situation. Individuals agreed to cooperate even though they were putting their lives at risk.
- Status-related principles: such as biophysical criteria, social characteristics as age
- The efficiency : choose the workers with the best chance of success in the shortest possible time.
- The “time” principle : the more time passed the more the tasks could become dangerous due to the rising radioactivity levels

1 – Ethical principles (4/4)

- The "formal" principles = socio-demographic
- The “contextual” principles = they cannot always be defined *a priori*, but be able to adjust to the real-time context.

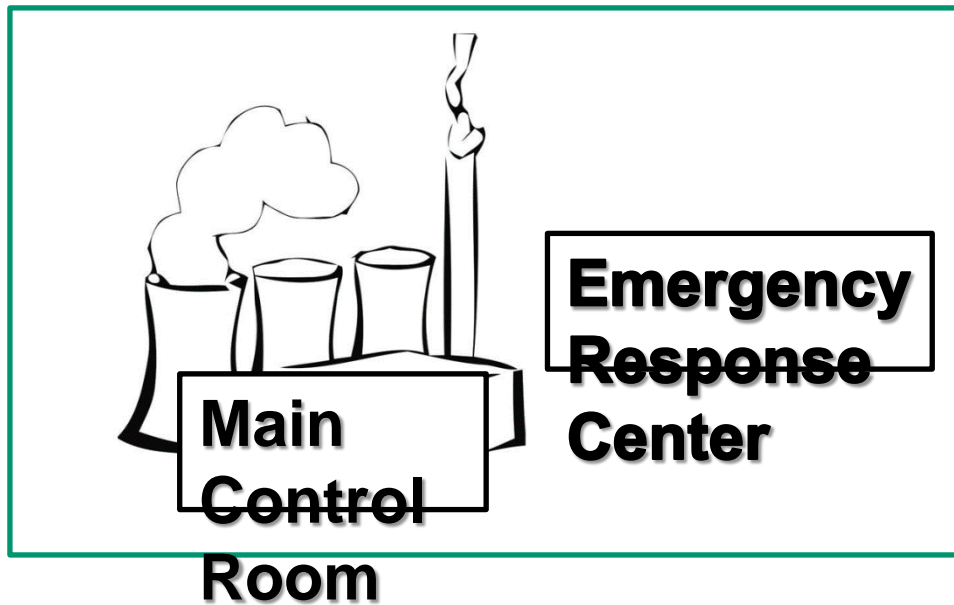
2 / The Circumstances

- Two factors contributed to defining in which circumstances the **chosen** workers had to go on the field:
 - The organisational factor : define the priority of the task to be performed
 - The institutional factor try to contribute to formally define the conditions to move on the field.

2 / The Circumstances

Organizational Factor

When all possible solutions have been exhausted the need for venting manually is required.



- There is a tension between the workers safety and the « need » to complete urgent tasks
- For the ERC, the deterioration of worker safety is accepted insofar as it helps to save more lives.

2 / The Circumstances

Institutional Factor

When TEPCO's executive management and the government experts realised that the situation was worsening with the increasing level of radioactivity, they decided to define new exposure limits.



- No objective way of predetermining the level of radiation that operators have to face in these situations.
- This decision generated some embarrassment inside the plants.

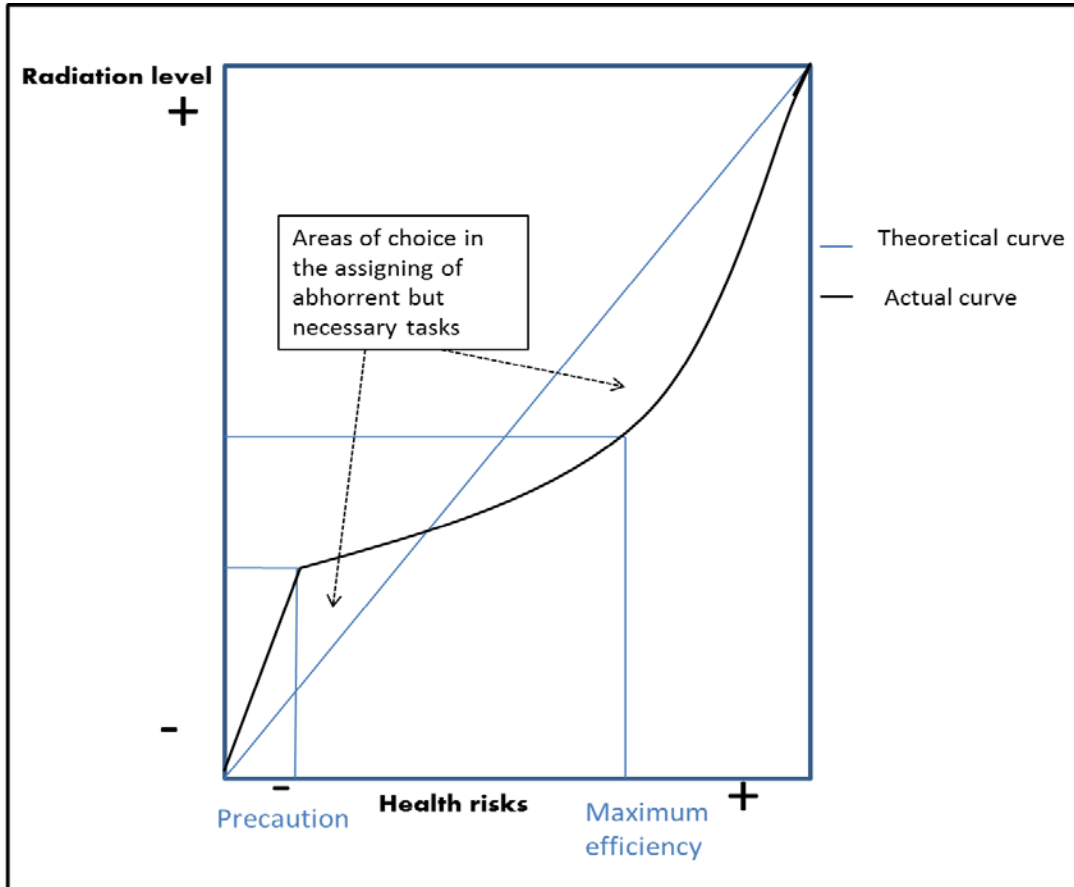
“the government’s ceiling made it possible, in institutional terms, for workers nearing their dose limits to stay on the front lines a while longer. But the step did not make human bodies more resistant to radiation” ([Kadota 2014](#)).

3 / Ethical strategies

Two types of ethical strategies can be distinguished:

- *The precaution principle*, the action chosen is not necessarily the most effective from the perspective of accident management, but is the most effective from the point of view of the health of workers.
- *The principle of maximum effectiveness* favours rescue actions to the detriment of the health of workers.

3 / Ethical strategies



The preservation of the health of workers is a priority that is not stable but rather fluctuates to fit the needs of the environment and protect the greatest number of people.

Source: based on the work of Elster and Herpin (1992)

Conclusion

- The highest hierarchy should define some strategic guidelines in the management of accident leading
- It seems important in order to maintain the social cohesion of the group that these principles could be discussed and defined locally
- Think about it now

Thank you for your attention

