

# The resilience of the nuclear sector in Europe in the face of pandemic risks

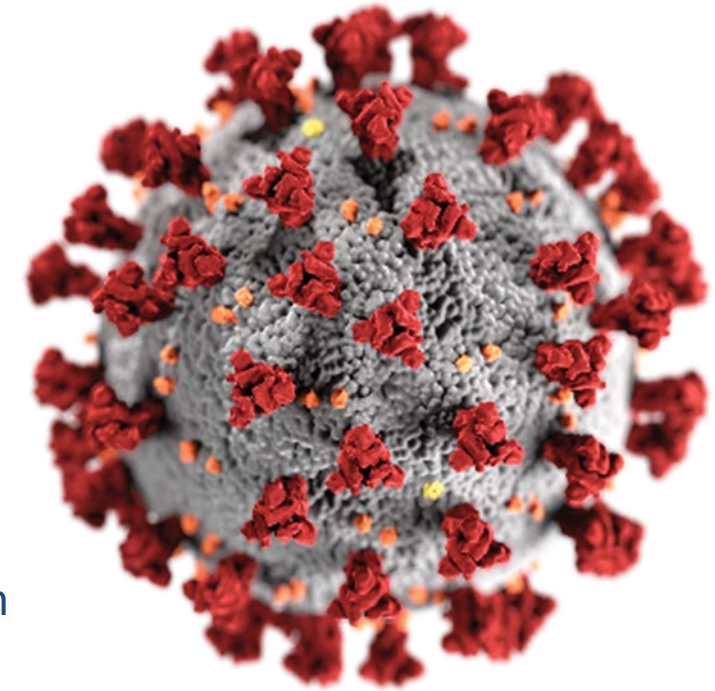
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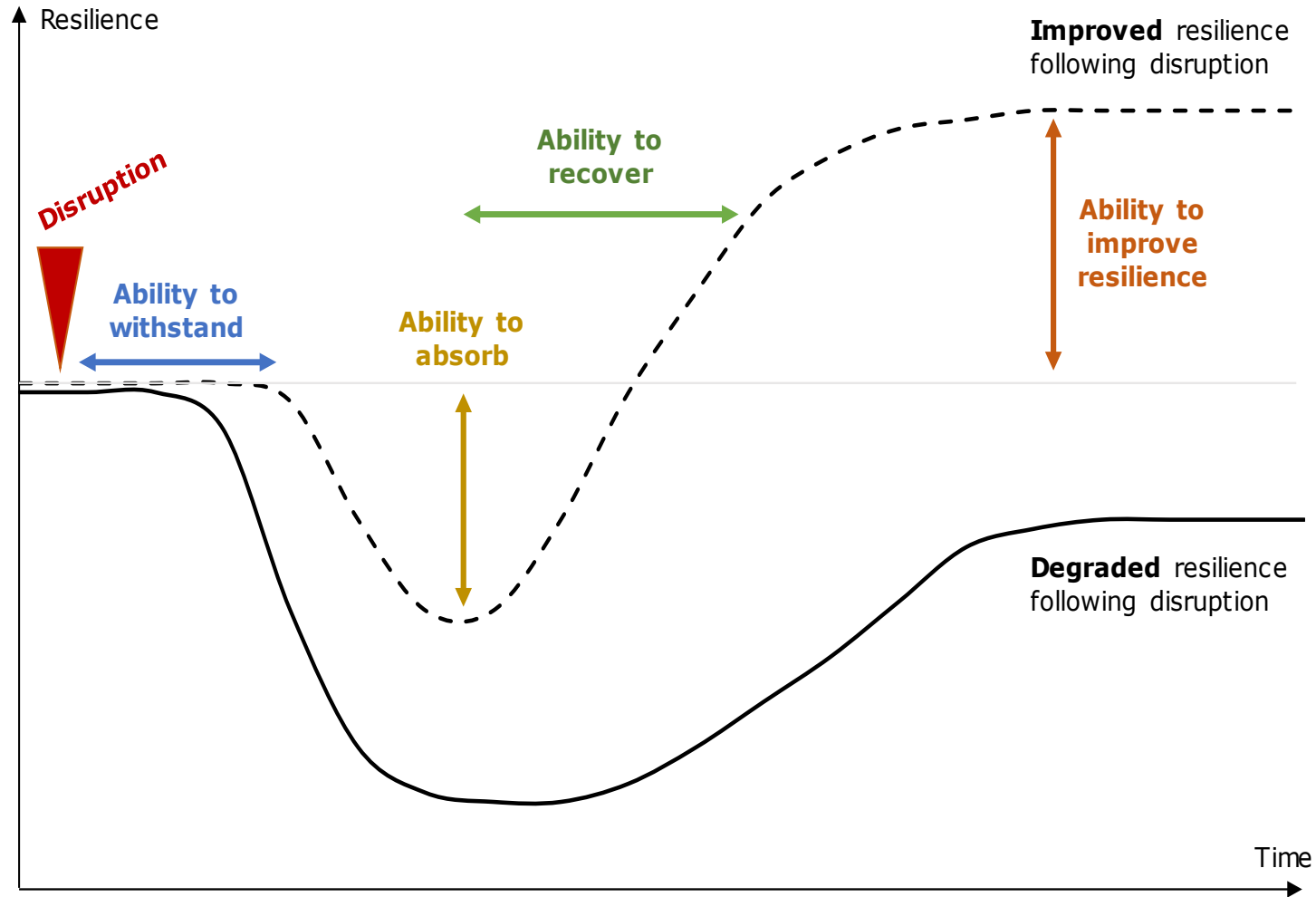


# Most important outcomes of the study

- The disease had a very low impact on operational staff health in nuclear facilities, thanks to the protective measures, but created personnel anxiety
- The major consequences came from the measures taken for controlling the pandemic:
  - Drop in economy, and in electricity and medical isotopes demands
  - Distancing and sanitary constraints
  - Borders closing and limited airflights
- Thanks to the nuclear crisis training and radioprotection framework, the nuclear facilities readjusted quickly their working patterns, with limited impact on production capacity
- Safety was maintained, and regulators controls were quickly readjusted in an effective way
- Major difficulties were on plants in construction or having on-going large maintenance and repairs operations, leading into significant disturbances in costs and time schedules, which are not yet recovered



# Lessons learnt and potential improvements for the future



- The study consisted in collecting data, covering the first year of the COVID19-pandemic, from
  - The main stakeholders (Utilities, Safety Bodies, Supply Chain) through questionnaires and interviews
  - International data sources
- Analysis of the abilities and difficulties in the European nuclear sector during the 3 main phases of the pandemic crisis, while
  - Withstanding the disruption (level of anticipation)
  - Absorbing it, by quick adaptation
  - Recovering from it and going back to a stabilized mode of operation
- Recommendations were given in order to get a better resilience against a new similar crisis by
  - Being better prepared
  - Facilitating a rapid adjustment during similar situations
  - Developing a more resilient normal mode of operation

# Recommendations for improving resilience through a better preparation

The service suppliers and key equipment and material suppliers are not formally identified as essential service suppliers. (1)

A better mapping of key suppliers to essential services providers could be beneficial to Member States to improve the coordination with public bodies in the case of future health emergency situations.

Business Continuity Plan systems appear country or industrial player-dependent, with close connection with emergency preparedness and response considerations, culture, and spirit. (2)

A specific benchmark analysis of business continuity plans across the nuclear industry would allow to review their uniformity, effectiveness, and develop good practices for business continuity plan requirements across Europe

# Recommendations for improving the capacity for rapid adjustments during a new crisis - 1

International and European collaborations allowed to share a large quantity of technical information to support utilities and regulators in managing COVID-19 pandemic. Coordination between the industry and International and European organisations has shown been crucial during crisis to ensure an efficient spreading of information. (3)

Assess the feasibility of setting a dedicated exchange forum for external disruptions, that would gather European nuclear industrial players, regulators, authorities, to improve the efficiency of information exchanges across Europe

As the pandemic is still underway at the time of writing, it was recommended to continue monitoring and implement an overall evaluation of the definitive ability to the nuclear industry to recover from the COVID-19 pandemic. (7)

At this stage, it is expected that no specific concern shall be expected, but such a finding shall be reassessed in a few years.

## Recommendations for improving the capacity for rapid adjustments during a new crisis - 2

The pandemic led the industry to adapt to COVID-19 specificities, to consider new sanitary standards by modifying (sometimes in-depth) the standard good practices. While entering the 3rd year of the pandemic in Europe in 2022, it seems that these adaptations had no negative impact to date, but the question remains on their long-term impacts. (8)

Measures taken in 2020/2021 that have proven to be efficient at that time could lead to deficiencies later (delayed maintenance, remote inspection or more weight on the use of informed risk from regulators, etc.). Thus, it is suggested to continue monitoring these potential long-term effects.

The COVID-19 pandemic had undeniable short/medium term impacts on our European economies, nuclear industry being directly touched by the general decrease of electricity demand during the period. Yet, through all the measures taken at Member States level to support the economy, a long-term fall of electricity demand that would have negatively impacted European utilities was prevented. (9)

Utilities have seen their financial health weakened during the last decade, while having at the same time to prepare and take an active part in the energy transition, through large investments to secure future European electricity supply. Member States shall then ensure that the future needed investments, both inside or outside nuclear sector, will be deemed possible by their utilities

# Recommendations for developing a more resilient normal mode of operation

The COVID-19 pandemic forced the nuclear industry to adapt its day-to-day operational practices, with an increased use of teleworking and electronic exchanges among stakeholders. (4)

Launch, in relation with European international professional organisations, a strategic action plan to support the industry in setting new standards of operation (teleworking, remote inspections...)

Whereas operational safety was deemed unimpacted by Safety Authorities and Utilities during COVID-19 pandemic, uncertainty remains on the Emergency Preparedness and Response (cancelling of emergency exercises, limited practicality of Emergency Preparedness procedures under pandemic constraints, etc.). (5)

Evaluate to what extent EP&R procedures impacted in the frame of external disturbances, to conclude on the resilience of the nuclear sector in nuclear emergency situations.

The lack of standardised transportation regulation among EU Member States had historically complicated the administrative logistics management (e.g., different standards, forms and authorisations are needed for each Member States). (6)

Working towards a more harmonised approach for radioactive material transport could be beneficial to the radionuclide industry, easing transborder logistics administrative procedures.



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[alain.vallee@nucadvisor.com](mailto:alain.vallee@nucadvisor.com)