

**МІНІСТЕРСТВО ОСВІТИ І НАУКИ УКРАЇНИ**  
**Національний авіаційний університет**  
**Aix-Marseille Université (France)**  
**TESOL – Ukraine**

**НАЦІОНАЛЬНА ІДЕНТИЧНІСТЬ  
В МОВІ І КУЛЬТУРІ**

**Збірник наукових праць**

**Київ 2017**

УДК 821.09(100)(082)

НЗ5

**Національна ідентичність в мові і культурі:** збірник наукових  
НЗ5 праць / за заг. ред. А.Г. Гудманяна. О.Г. Шостак. - К.:Талком, 2017. -  
343 с.

**ISBN 978-617-7397-36-5**

Збірник містить тексти доповідей Х Міжнародної конференції з питань національної ідентичності в мові і культурі, що відбулася 17-18 травня 2017 року на кафедрі іноземних мов і прикладної лінгвістики Навчально-наукового Гуманітарного інституту Національного авіаційного університету (м. Київ, Україна).

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*Рекомендовано до друку Вченою радою Гуманітарного інституту  
(Протокол № 3 від 19 квітня 2017 р.)*

ISBN 978-617-7397-36-5

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## **NUCLEAR ENERGY DEVELOPMENT IN THE CONTEXT OF TRANSBOUNDARY EFFECT WORLDWIDE**

Nuclear accidents bear not only significant human and environmental but also economic risks. These, however, are risks the nuclear industry has been sheltered from by political decisions limiting their liability. A nuclear industry under economic stress may become an even more dangerous industry.

Unlike fossil fuel-fired power plants, nuclear reactors do not cause air pollution or produce carbon dioxide while operating. However, the processes of mining and refining uranium ore and producing reactor fuel require large amounts of energy. Nuclear power plants also have large amounts of metal and concrete, which require large amounts of energy to manufacture.

The “big five” nuclear generating countries—like, the U.S., France, Russia, China, and South Korea—generated about two-thirds (69 percent in 2014) of the world’s nuclear electricity in 2015. China moved up one rank. The U.S. and France accounted for half of global nuclear generation, and France produced half of the European Union's nuclear output. The nuclear industry contributes significantly to the economy of these countries in terms of GDP, government revenue and employment.

However, despite the benefits of the nuclear industry it causes harmful effects on the environment of these countries.

Low and high level wastes are dangerous for the environment, and for people living in nearby areas. If waste are not stored adequately, radioactive substances could find their way into the ground water, or contaminate other valuable resources.

The European continent three decades after the Chernobyl accident is shocked, 6 million people continue living in severely contaminated areas. Radioactive fallout from Chernobyl contaminated 40% of Europe's landmass. A total of 40,000 additional fatal cancer cases are expected in 50 years. Five years after the Fukushima disaster began on the east coast of Japan, over 100,000 people remain dislocated. Only two reactors are generating power in Japan, but final closure decisions were taken on an additional six reactors that had been offline since 2010-2011.

Every industrial accident has its own very specific characteristics and it is often difficult to compare their nature and effects. The large explosions and subsequent 10-day fire in Chernobyl. The dispersion of

radioactivity from Chernobyl led to wide-spread contamination throughout Europe, whereas about four fifths of the radioactivity released from Fukushima Daiichi came down over the Pacific Ocean. Radioactivity in the soil mainly disappears with the physical half-lives of the radioactive isotopes (30 years for the dominant cesium-137). Radioactive particles are greatly diluted in the sea and many isotopes, including cesium-137, are water soluble. This does not mean that radioactivity released to the ocean does not have effects, particularly on fish species near the coast, but further away any effects are difficult to identify. Some parameters can be compared, and some are model estimates based on calculations and assumptions: care needs to be taken in interpreting their conclusions.

Taking all the criteria into account, the Chernobyl accident appears to be more severe than the Fukushima disaster: 7 times more cesium-137 and 12 times more iodine-131 released, 50 times larger land surface significantly contaminated, 7–10 times higher collective doses and 12 times more clean-up workers. More people were evacuated in the first year at Fukushima than at Chernobyl. However, the number has tripled over time to about 400,000 at Chernobyl because more and more people were displaced as more hotspots were identified [1].

The transformation of the power sector has accelerated over the past year. New technology and policy developments insist on decentralization of systems and usage of renewable energies. The Paris Agreement on climate change gave a powerful additional boost to renewable energies.

The 2015 data shows that renewable energy power generation is satisfying continuous rapid growth, while nuclear power production, excluding China, is shrinking globally. Small size and lower capacity factors of renewable power plants continue to be more than compensated for by their short lead times, easy manufacturability and installation, and rapidly scalable mass production. Their high acceptance level and rapidly falling system costs will further accelerate their development.

This in turn makes it possible to reduce the influence of the uranium industry and the environmental consequences of using nuclear energy to increase the social and cultural level of the population.