



Rivne nuclear power plant in Ukraine.

# NUCLEAR LEGACIES: A SAGA OF MODERNITY

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**T**he conference *Nuclear Legacies: Community, Memory, Waste, and Nature* took place from September 14 to 16, 2017, at Södertörn University. It gathered about forty scholars engaged in nuclear issues, coming from twelve different countries and representing many different disciplines. The conference was one of the concluding events of the research project titled “Nuclear Legacies: Negotiation radioactivity in France, Russia, and Sweden” (funded by the Foundation for Baltic and East European Studies); a basic rationale for both the project and the conference was the expanding landscape of closed-down nuclear reactors confronting us today.

Out of the more than 500 commercial nuclear reactors in existence around the world, 100 have already been taken out of use. In the near future, many more will be closed down, as the first generation of reactors is becoming obsolete. Regardless of shifting political views on nuclear power and ongoing new construction in several countries, humanity has entered an era in which post-nuclear sites exist in large numbers. Furthermore, the current methods of control of radioactive material and sites, and the current experiences of those possessing the privileged high status that comes with the vulnerable “nuclear way of living” and of those who don’t, are marked by a striking asymmetry of power between different groups of actors and between different hierarchies of value.<sup>1</sup> This expanding landscape, with its inherent tensions, calls for a similarly expanding scholarly attention.

Public interest in nuclear legacies has often centered on nuclear weapons in a Cold War context. In this conference, however, the focus shifted to less spectacular commercial nuclear power production and its legacy. This is a legacy that knits together regions, nations, and continents; professionals and lay-

men; center and periphery; nature and culture; and past, present, and future.

**A GLIMPSE AT THE CONFERENCE** paper presentations reveals subjects such as radioactive gardening, nuclear professional improvisation, and desires to show and to hide. The specific character of this nuclear legacy and the particularities of dwelling and working on a nuclearized site were common topics in the presentations. Bengt G. Karlsson, whose works deal with intimacy and estrangement at three nuclear sites in Sweden, notably approached the topic of the nuclear way of living in a nuclearized town. The scientific communities working with nuclear issues also drew much scholarly attention: Anna Veronika Wendland engaged with the development of the social and professional identities of the nuclear workers at Rivne in Ukraine in order to challenge current writing on nuclear history by offering a bottom-up perspective; Susan Molyneux-Hodgson addressed the creation of radiological knowledge by exploring the practices of scientific communities in nuclear-waste contexts; Sonja Schmid reported on her work with engineers at nuclear power plants as she trains them to improvise in order to prepare them for the unexpected – that is, accidents “exceeding the design basis”; and Ekaterina Tarasova approached the topic of antinuclear activist communities by reflecting on the invisibility of antinuclear movements and the professionalization of environmental NGOs in our time of “nuclear renaissance.”

The decommissioning processes of different nuclear power plants were examined from different angles: from the debates that take place before a decision to close (e.g., discursive argumentation for or against the closure of the Fessenheim nuclear



The participants visited the underground site of Sweden's first nuclear reactor (R1).



"Nuclear Heritage – What to Do with It?" Public panel discussion.



Atomic gardening was a thing of the 1960s, but is now more or less forgotten.

power plant in France by Florence Fröhlig) to how communities in nuclear towns are affected by such a decommissioning (e.g., Leila Dawney and Kristina Šliavaitė examined how the community in the vicinity of the Ignalina nuclear power plant in Lithuania was adjusting to decommissioning and to the accompanying long periods of uncertainty). Several scholars were studying the decommissioning processes and future of the Sellafield nuclear power plant in the UK. For example, Sarah May (who is part of the research network Heritage Futures) engaged with the issue of waste at Sellafield and opened a discussion on transgenerational equity and heritage future-making. Penelope Harvey, Petra Tjitske, and Damian O'Doherty drew attention to the fact that it is not only nuclear buildings that represent a legacy; safety itself is part of the legacy of Sellafield.

The fates of nuclear sites and their *heritagization* processes were notably addressed by Trinidad Rico, who is currently engaged in writing the history of the Huemel atomic site in Patagonia, Argentina. The writing of this site's story is however challenging due to the scarcity and dispersal of its sources of material, such that information had to be obtained by collecting alternative sources, especially rumors attached to the island. In contrast to Trinidad Rico, who addressed a perceived "heritage of failure," Jaume Valentines-Álvarez reported on the prevention of heritage preservation through the 2005 removal of a 2 300 m<sup>3</sup> nuclear block in Barcelona, Spain, as way of transforming a fascist legacy into a "non-legacy."

WHILE RICO AND VALENTINES-ÁLVAREZ presented unclaimed sites, Kasia Keeley examined how the nuclear heritage of the Hanford site in the United States was integrated into the Manhattan Project National Historical Park and, and what role landscape plays in moving beyond an authorized heritage. Fredrik Krohn Andersson problematized the issue of heritagization further in a discussion on the purpose of preservation. Should a nuclear power plant be preserved as an architectural heritage site, or as a site for dark tourism? Should it be preserved as an "object of architecture merit" that should be remembered, or

**“SHOULD A NUCLEAR POWER PLANT BE PRESERVED AS AN ARCHITECTURAL HERITAGE SITE, OR AS A SITE FOR DARK TOURISM?”**

as a way of “adjusting new technology to the environment”, of blending it in with the landscape? In this way, nuclear heritage seems to possess both a desire to show and a desire to hide.

The preservation of a nuclear site opens discussions about a difficult heritage—one that challenges the “identity-affirmative nature of heritage-making,” which is normally based on triumphs and achievements.<sup>2</sup> Several scholars in different contexts addressed the concepts of authorized heritage and the memorialization of nuclear projects. Eglė Rindzevičiūtė analyzed the creation of nuclear cultural heritage in Russia over time, and showed that, although the military use of the atom was downplayed during the Soviet period, the atom bomb is now at the center of current exhibitions.

Roman Khandozhko addressed the *sacralization* of the communist past in current discourses related to the organization of a world museum of nuclear energy in Obninsk, Russia. The sacralization of the atom, however, is not a new phenomenon, as illustrated by Ilia Kalinin, who presented the utopia of nuclear energy in Soviet discourses of the 1920s. Like Sellafield in the UK, the nuclear site of Obninsk drew much scholarly attention: Galina Orlova engaged with the nuclear topology of the site – that is, the spatial concentration of nuclear-related research institutes at Obninsk; Aleksandra Kasatkina addressed the nuclear legacies found in the home archives and personal memories of veterans of the nuclear industry; and Zinaida Vasilyeva analyzed how risk, health, and memory were dealt with in radiation narratives collected at Obninsk.

Alison Boyle addressed the official nuclear discourse in British museums by examining object biographies: she explored the public culture of atomic physics by studying the history of the artefacts displayed in British museums. Vanessa Cirkel-Bartelt

reflected further on the British atomic legacy by addressing the issue of atomic gardening and radioactive breeding, and their disappearance from public and historiographical concerns after the 1960s. A physicist and radiation protection officer, Alan Flowers, drew attention to the curation of radiation hazards in contemporary museum exhibitions; such hazards range

from radium emanators to the uranium compounds in vintage green-colored glass items or timepieces (i.e., radium dials and numerals). Flowers addressed the need to reflect on the holding and displaying of radioactive materials in museums, and urged everyone to identify all radioactive materials in their collections and to undertake contamination checks of all radioactive objects, in order to determine whether the exhibit poses significant risk, or is too hazardous to be shown. The curator Ele Carpenter also engaged with the issue of radiation, but did so from an artistic perspective by presenting the exhibition “Perpetual Uncertainty,” in which artists concerned with temporality, materiality, and aesthetics materialized their radiological desires and fears, covering topics from naturally occurring uranium to radioactive waste. The appropriation of the nuclear legacy by popular literature was examined by Karena Kalmbach, who used two fictional books<sup>3</sup> to show how politics has influenced different representations of the Chernobyl catastrophe, and how the disaster has been constructed into different truths in France and Germany.

Nuclear legacies very tangibly impact nature in various ways. Anna Storm drew attention to the monitoring of fish upstream and downstream of nuclear energy production, and suggested how different imaginaries are attached to the monitoring of nuclear fish. Tatiana Kasperski and Andrei Stsiapanau addressed another very visible legacy of nuclear production: radioactive waste. Kasperski examined the politics of nuclear waste in contemporary Russia and addressed the controversy that is embedded in definitions of wastefulness and *nuclearity*, while Andrei Stsiapanau more specifically explored how the issues of nuclearity and nuclear waste are negotiated and re-negotiated at the Sosnovy Bor nuclear power plant located near St. Petersburg.

Cornelius Holtorf engaged with the issue of nuclear waste in a more holistic way by drawing attention to the temporality of the current solution of geological nuclear-waste repositories; he emphasized that it is impossible to predict how coming generations will view nuclear waste. Thus, cultural heritage is conceptualized differently through time: “To each future, its own future!”

Other scholars discussed the role of nature as a protector and radical conservation. Rodney Harrison reflected on landscape’s salutary and sacrificial role in nuclear power conservation, and Kate Brown demonstrated the continuing impact of the Chernobyl catastrophe on the surrounding landscape 30 years later, from the deformity of pines’ thorns to radioactive berries. Given the significance of nature in the production of nuclear energy, Per Högselius proposed a revision of nuclear energy history that would put water at the center of the narratives, since water is crucial to the production of nuclear energy; this proposal thus challenges existing national narratives on nuclear energy production.

**IN ADDITION TO RESEARCH** presentations and discussion, the conference participants acquainted themselves with some parts of the Swedish nuclear legacy. After Professor Arne Kaijser provided a historical background, participants visited the underground site of Sweden’s first nuclear reactor (R1), located at the campus of the Royal Institute of Technology (KTH) in Stockholm, which was in operation from 1954 to 1970. They also visited Sweden’s

first commercial nuclear power plant at Ågesta (R3), located in the Stockholm suburb of Farsta, which was in operation from 1964 to 1974. These occasions included various happenings and art events: the artist Jenny Wiklund presented her radioactive reflection at R1, and the artists Carl Johan Erikson and Karin Willén presented their work titled *10°C – Recipes from the Archipelago of Forsmark*, in which they offered savory crispbread with fish caught in the warm waters near the Forsmark nuclear power plant.

At the National Museum of Science and Technology, the conference participants took part in the opening of a photographic exhibition on the Ågesta nuclear power plant, curated by Magdalena Tafvelin-Heldner. The event was followed by a public panel discussion entitled “Nuclear Heritage – What to Do with It?” that brought together a panel consisting of Kate Brown, professor of history at the University of Maryland, USA; Malin Brikell and Magnus Oskarsson from Vattenfall; and Fredrik Linder from the Ministry of Culture in the government offices of Sweden. The public panel discussion offered the opportunity to discuss with a broader audience the issues and problems that had emerged during the scholarly discussions.

**THE CONFERENCE ATTESTED** to the tremendous impact nuclear energy has had on human society in the past century. However, even if scholars were to agree that “legacy” is something that is passed on, whether we like it or not, whereas “heritage” is something we choose to pass on, there is no consensus about which story should be passed on. Whose version of the story is to be heard? Who is legitimated to narrate the story? The different papers that were presented during the conference clearly demonstrated that the various countries under scrutiny had very different cultural approaches to nuclear legacies. While some countries are tempted to erase all related memories when decommissioning a nuclear site, others struggle to preserve either the nuclear legacy or the chosen nuclear heritage. However, one striking aspect of the nuclear legacy that transcends nation-states’ memorialization of this saga of modernity is the range of non-human agents involved in the nuclear legacy. As presented at this conference, these agents included water, rocks, berries, mushrooms, trees, fish, and layers of clay. It is clear that the challenges connected to the nuclear legacies of the world cannot be solved only as a technical issue; they are – perhaps primarily – an issue of biological, social, and cultural concern. ✖

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## references

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- 2 S. Macdonald, *Difficult Heritage: Negotiating the Nazi Past in Nuremberg and Beyond* (Routledge, 2009), 2–4.
- 3 “Tchernobyl sur Seine,” by Hélène Criéand Yves Lenoir, and “Die Wolke,” by Gudrun Pausewang.