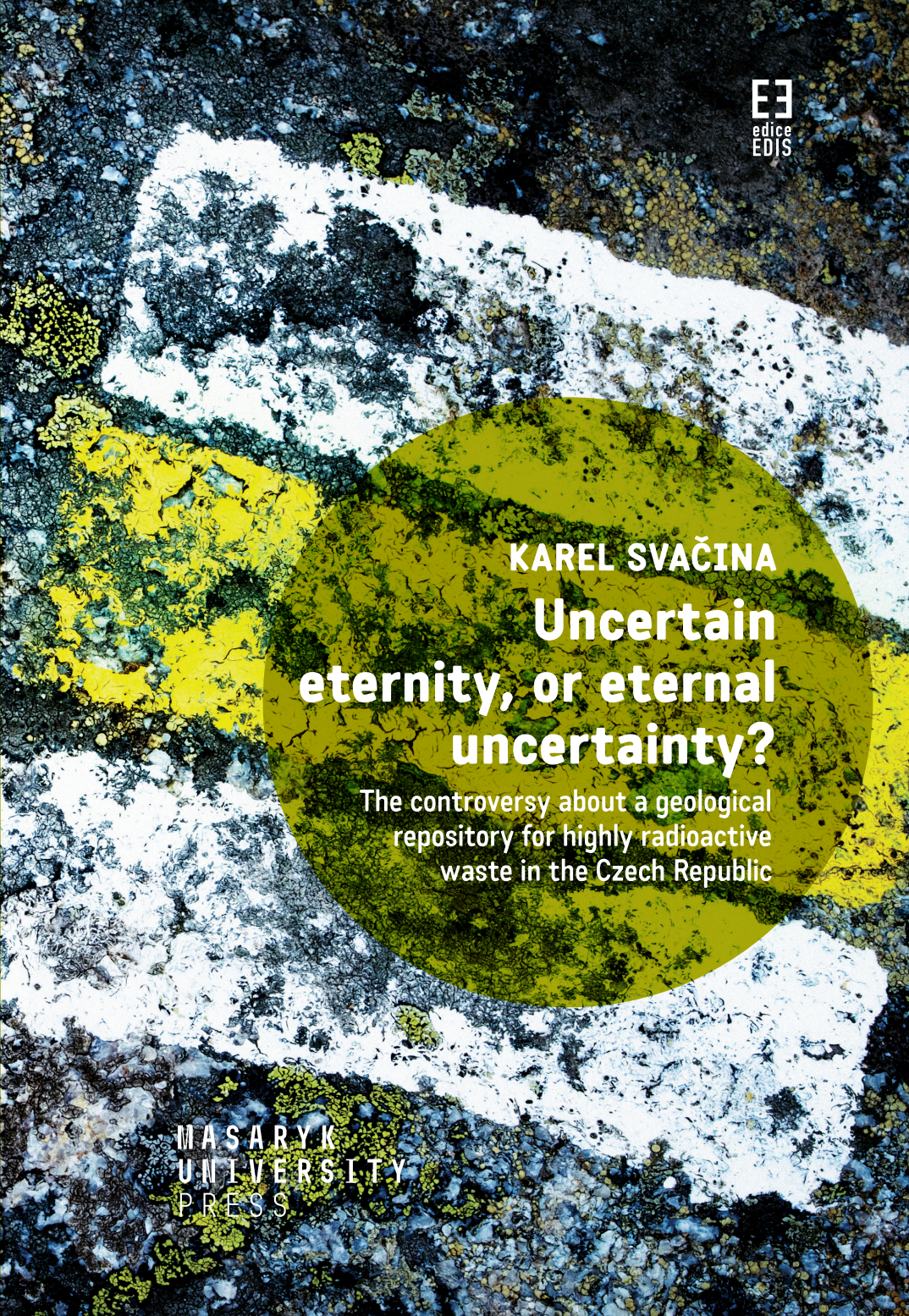
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EDIS
KAREL SVAČINA
Uncertain eternity, or eternal uncertainty?
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MASARYK UNIVERSITY PRESS

EDIS
Publication series
Faculty of Social Studies, Masaryk University

Volume 20

MUNI
PRESS

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The controversy about a geological repository for highly radioactive waste in the Czech Republic

KAREL SVAČINA

Masaryk University Press
Brno 2019

Katalogizace v knize – Národní knihovna ČR

Svačina, Karel
Uncertain eternity, or eternal uncertainty? : the controversy about a geological repository for highly radioactive waste in the Czech Republic / Karel Svačina. – 1st edition. – Brno : Masaryk University Press, 2019. – 1 online zdroj. – (EDIS : publication series – Faculty of Social Studies, Masaryk University ; volume 20)

ISBN 978-80-210-9340-9 (online ; pdf)

* 621.039.584 * 316 * 005.591 * 005.311.6 * 005.334 * 165.412 * 323.212:172.1 * 502/504:177.7 * (437.3) * (048.8)
– úložiště radioaktivního odpadu – Česko
– úložiště radioaktivního odpadu – sociologické aspekty
– programy a projekty – Česko
– rozhodování
– riziko
– nejistota
– občanská angažovanost – Česko
– environmentální odpovědnost – Česko
– monografie

3 – Společenské vědy [18]

Published with the Faculty of Social Studies, Masaryk University subvention within the EDIS publication series, aiming to support PhD. graduates' publication activities.

Reviewers:
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ISBN 978-80-210-9340-9
ISBN 978-80-210-9339-3 (print)

https://doi.org/10.5817/CZ.MUNI.M210-9340-2019

CONTENS

ACKNOWLEDGEMENTS

The present manuscript is a revised version of my dissertation defended in April 2018 at the Department of Sociology, Masaryk University in Brno. The writing of the dissertation was a long journey, and throughout this journey I benefited from the help of many people and organisations. I would not have thought of the topic of this dissertation if I were not a part of the International Socio-Technical Challenges for Geological Disposal (InSOTEC) project, supported by the European Atomic Energy Community's Seventh Framework Programme (FP7/2007–2011, grant number 269906). All partners in the InSOTEC project deserve their credit for the many fruitful discussions, and for sharing their perspectives and experiences in the radioactive waste management field or in science and technology studies (STS). Instead of naming all of the InSOTEC colleagues, I would like to single out the InSOTEC coordinator Anne Bergmans, who was an excellent boss and friend throughout this time.

The Czech participation in the InSOTEC project was facilitated by the Center for Theoretical Study, a joint research institute of Charles University in Prague and the Czech Academy of Sciences. During the InSOTEC project and after, the Center for Theoretical Study became much more than a project facilitator for me. I am deeply indebted for the generous support, as well as the always friendly and stimulating environment of this unique institution.

During the InSOTEC project and my PhD studies at the Faculty of Social Studies of Masaryk University, I attended various seminars, courses, and conferences. It would be a long list to mention all the people with whom I had valuable discussions and who provided comments on my earlier texts, but the courses 'Writing Nature' and 'Politics and Practices of Methods' at the TIK Centre for Technology, Innovation and Culture of the University of Oslo deserve special recognition. I would like to thank Kristin Asdal, all the other lecturers

and organisers, as well as all the participating PhD students for all the interesting conversations and useful comments.

When collecting data for the InSOTEC project and for my dissertation, I met many people who at some point have been involved in the controversy about the Czech repository – mayors of the municipalities in the preselected areas, members of non-governmental organisations and local associations, people from the Radioactive Waste Repository Authority (SÚRAO), as well as other researchers and colleagues. I would like to thank all these 'respondents' for always being willing to talk to me, and for being open to discussion. It is my obligation to treat all of them fairly in the text that follows, and my wish is that my work could bring a new and refreshing perspective to the controversy.

In summer 2015 I spent six weeks at the Laboratory for the Study of Reflexivities in Paris, France. It was during this stay that the final text of my dissertation started crystallising. I would like to thank the French government for providing me a generous scholarship which made this research stay possible, and even more importantly, I would like to thank Yannick Barthe for unselfishly welcoming me to Paris and to his research institution, for providing valuable comments on my texts, and for encouraging me to be brave.

Writing the dissertation would have been utterly impossible without my supervisor Zdeněk Konopásek. Zdeněk Konopásek invited me to participate in the InSOTEC project and to become a member of the Center for Theoretical Study community. He was also a great colleague in the course of the InSOTEC project, when together we followed and discussed the Czech geological repository controversy. As a matter of fact, he guided me through much of my sociology and STS studies, and he was never satisfied with simplistic or superficial explanations in my texts. I would like to thank him for all of that.

The EDIS grant award to publish my dissertation as a monograph provided an incentive and an opportunity for me to further elaborate on the text, to work on the clarity of arguments, and to make the text more readable and accessible as a monograph. In this respect I greatly appreciate the help of Tereza Stöckelová, who accepted the role of the scientific editor of this publication, and whose advice and assistance in this process has been invaluable to me.

Above all, I would like to thank my family for their patience and support during the long course of my studies. I would like to thank especially my wife Jitka for her almost unlimited patience, and for taking care of our children while I have been away working on this dissertation. I would like to dedicate this text to her.

1. INTRODUCTION

The Czech Republic is a country that uses nuclear power, and as such it is faced with the question of what to do with its spent nuclear fuel and high-level radioactive waste.[1] Similarly to a number of other countries facing such a situation, the Czech Republic has chosen to construct a deep geological repository to contain its high-level radioactive waste. However, and again similarly to a number of other countries, the decision to build the repository has turned into a long-lasting controversy.

The controversy can be traced back to the early 2000s, when a number of municipalities across several regions within the Czech Republic learned that they were being considered as sites potentially suitable for the construction of the repository.

On Tuesday, 25 September 2001, a national newspaper reports the following:

> **Mayors are travelling [to Prague] to prevent the construction of a geological repository**
>
> **Růžená** – the mayors of municipalities around Růžená, and the representatives of local ecological initiatives […], are travelling [to Prague] today to take part in the public Senate discussion on the governmental Strategy for nuclear waste management. The reason is that a proposal to construct a deep geological repository is supposed to be a part of the Strategy, and one of the places that is preselected for the repository construction is a vast area close to Růžená in the Jihlava region (Blažek 2001b).

[1] Spent nuclear fuel can be considered as either a resource or a waste product (cf. OECD 2010: 64). In the Czech Republic, spent nuclear fuel becomes waste when its owner declares it to be waste (MPO ČR 2001a: 5).

A geological repository is an underground facility whose purpose is to isolate highly radioactive waste from the biosphere for as long as it remains harmful, which is usually considered to be in the order of hundreds of thousands of years (cf. OECD 2009). This is to be achieved by the combination of 'natural' and 'engineered' barriers. Whereas 'engineered barriers' typically refer to a metal container surrounded by a buffer material (such as a special kind of clay called 'bentonite') holding the waste in place, 'natural barriers' refer to the bedrock, most often granite or clay about 500 metres underground, which is supposed to prevent the waste from travelling to the surface in case (or when) the engineered barriers fail.

Two days later, the same newspaper continues:

Municipalities want information about the repository

Růžená – The public discussion on the governmental Strategy for nuclear waste management, which took place on Tuesday in the Senate of the Parliament of the Czech Republic, did not bring any change in the attitude of municipalities in the Růžená region. 'For now it was just an informational meeting, where we were given an opportunity to express our comments on the Strategy,' said Ladislav Nechvátal, the vice-mayor of Třešť.

…

The municipalities [of the Růžená region] currently mostly reject having the repository in their backyards, but most of all, they ask the state to give them as much information as possible on the effects of the repository on its surroundings.

'People live everywhere, and therefore we cannot say: let it be anywhere, but we do not want it to be here,' said Zdeněk Jirsa, the mayor of Dolní Cerekev.

At the beginning of October, representatives of municipalities around Růžená are supposed to meet with representatives of the Radioactive Waste Repository Authority (SÚRAO), whose task over the following several decades is to prepare the repository. Another meeting in the beginning of November will also be attended by the experts on nuclear issues, as well as people from citizen's associations (Blažek 2001c).

The project of constructing a geological repository is a complex one. Ensuring its safety draws on different areas of expertise, from geochemistry to physics to engineering. However, a successful implementation of the repository depends not only on finding a place with favourable geological conditions and proving the safety of the combination of barriers, but also on finding a place with favourable social conditions (cf. Sundqvist 2002). In the Czech case, the plans to construct the repository created a public controversy as soon as the preselected municipalities learned about them.

Two years later, in September 2003, the same newspaper reports:

> **Tractor ploughed NO to nuclear repository**
>
> Although the site investigations have not started yet, people are already mobilising against the repository for nuclear waste. Close to Budišov in the Třebíč region, a hundred people protested against its construction. A tractor ploughed a huge 'NO' sign in a field, into which the protesters then assembled. The sign is supposed to be a clear message for researchers carrying out the aerial measurements.
> …
> 'We know that we will not stop the site investigations, but we want to express our dissent; we do not want to remain powerless,' said Jiří Horák, from the association, to the ČTK (Blažek 2003).

As of 2019, no country in the world had started the operation of an underground repository for high-level radioactive waste. The repository project is a long-term one. In the Czech Republic, in 1997 the parliament passed the 'Atomic Act', according to which the Czech state assumes responsibility for radioactive waste management. To this end, the Act establishes the Radioactive Waste Repository Authority (SÚRAO) as the state agency responsible for managing nuclear waste. SÚRAO is subordinate to the Ministry of Industry and Trade.[2] In 2002, the Czech government approved

[2] This position is different from the position of the regulatory body, the State Office for Nuclear Safety, which is directly subordinate to the Czech government.

the Strategy for nuclear waste management. This policy document includes a schedule, according to which a primary and a backup site for the repository would be selected by 2015, one of the sites would be selected by 2025, the construction of an underground laboratory would start in 2030, and the repository would begin operation in 2065.

In 2002 this schedule may have seemed quite relaxed, but it gradually proved to be too tight. In 2004, the Minister of Industry and Trade, to which SÚRAO is subordinate, announced a five-year moratorium on the repository project negotiations. The end of this moratorium in 2009 was marked by an international conference titled 'Towards a geological repository without conflict.' At this conference, the director of SÚRAO stated:

> When we came to you, we realised that with this idea, we collide with your current visions of the development of your [region]. The idea of the repository of course disrupted your visions and created resistance, and in some areas even emotions, considering the fact that it is a project that has its own risks, above all radiation risks. The project brings uncertainties, it can in a way block the development of the municipalities, because of course you do not know if in the end the repository will be built in the particular area or not. Another of your concerns, perhaps partly a legitimate one, is that decisions will be made at the central level without your participation. I think that these issues can be overcome in the future.
>
> …
>
> So the decision-making about geological disposal should always be based on the consent of the concerned municipalities. I think that it is possible to reach consensus, that we can talk openly and actually base the decision-making on consent. In order to make the 2065 deadline, the latest decision needs to be taken around 2050, similarly as in Sweden and Finland, where they made the decision several years ago, or in Sweden this year, and they want to have the repository in 2025. It is enough to make the final siting decision fifteen years before the repository starts operation. Of course the position of the municipalities may play an important role in the end,

> whether they accept the repository more or less. But what is also important is to have the areas well characterised, that is, to know the geological environment well at all of the sites (SÚRAO director, Conference 'Towards a geological disposal without conflict', 26th November, 2009).

'Consent' and 'participation' (along with 'geological research') became the key terms of the negotiations for several years after the moratorium ended. Following the conference, SÚRAO initiated the establishment of a 'Working Group for Dialogue about Geological Repository' with the goal to 'strengthen the transparent process' of siting geological disposal, 'respecting the concerns of the public' (Working Group 2010: 2). Between 2010 and 2012, SÚRAO also organised many public debates in the preselected municipalities. However, in 2013 the negotiations stopped when state authorities decided to proceed with site investigations without the consent of the affected municipalities. To some extent, the appeals for consent and participation were replaced by appeals for the need to do more research and obtain more knowledge in order to make the siting decision. Simply put, the state authorities started emphasising what the director said in the last two sentences of the above quotation, which can perhaps be paraphrased: 'the position of the municipalities may play an important role, but not now. Now we need to do research; we need to know more about the geology in order to be able to make the siting decision later.' However, the municipalities saw this as a betrayal of earlier promises. New protests were organised, and the Working Group for Dialogue gradually ceased working.

On 18 April 2015, hundreds of people in all seven preselected sites gathered to attend concerts and other cultural events, as well as marches and protests in a nation-wide event called 'A day against the repository.' Two days before that, SÚRAO issued a press release saying:

> The selection of a site suitable for the deep repository for radioactive waste in the Czech Republic is in its very beginning. ('Stanovisko Správy úložišť k procesu výběru lokality pro budoucí hlubinné úložiště'; SÚRAO, 16th April 2015)

The controversy continues.

1.1 THE PROBLEM

The controversy over the Czech geological repository project has lasted for more than a decade, and it may be argued that in many respects it has not moved much forward since the first protests in the early 2000s. Constructing the repository is surely a difficult and complex project. The excerpts above illustrate that what comes into play are governments and their policies, citizens associations, municipalities and their representatives, public media, the natural environment, scientific knowledge, protests, happenings, appeals to do more research, to learn more information, to emotions, dialogue, time-frames and schedules, consent, as well as risks and uncertainties. Such a controversy is in many ways typical for contemporary 'technological' societies in that a new technology is being developed, and this process combines science, expertise, lay knowledge, political decision-making, non-governmental organizations, and civil protest, among other things. Moreover, there is a possibility that an accident in relation to the technology will occur, which could have harmful and potentially disastrous effects for many people not directly involved with the technology. There could also be latent adverse effects of using the technology, which may only become known after a long period of time. In these respects the controversy over the geological repository is yet another in the long list of contemporary controversies over issues such as genetically modified organisms (GMOs) (e.g. Stöckelová 2008, 2009; Levidow and Carr 2007), asbestos, freons (e.g. Harremoës et al. 2001), pharmaceuticals (e.g. Abraham 1995), and so on. Furthermore, the envisaged repository is strongly linked with a specific geographical *site* where it will be physically constructed, causing controversies in places which are considered as potentially suitable. In this respect the debate over the geological repository resonates with other siting controversies, such as those of mobile phone masts (e.g. Hermans 2015), highways (e.g. Konopásek, Stöckelová, and Zamykalová 2008), and others (e.g. Boholm and Lofsted 2004).

At the same time, it may be argued that the technology that is at the centre of this controversy stands out from the others in several respects: first, it deals with highly radioactive materials, which are commonly perceived as one of the most dangerous man-made