Kasper Grann Andersson - DTU Orbit (15/10/2018)

Kasper Grann Andersson

Organisations

Senior Scientist, Risø National Laboratory for Sustainable Energy
11/01/2007 → 07/04/2016 Former
kgan@risoe.dtu.dk
VIP

Senior Scientist, Center for Nuclear Technologies
15/12/2011 → present
kgan@dtu.dk
VIP

The Hevesy Laboratory
28/01/2016 → present
VIP

Radioecology and Tracer Studies
25/02/2012 → present
VIP

Research outputs:

Comparison of experimental and calculated shielding factors for modular buildings in a radioactive fallout scenario
Experimentally and theoretically determined shielding factors for a common light construction dwelling type were obtained and compared. Sources of the gamma-emitting radionuclides $^{60}$Co and $^{137}$Cs were positioned around and on top of a modular building to represent homogeneous fallout. The modular building used was a standard prefabricated structure obtained from a commercial manufacturer. Four reference positions for the gamma radiation detectors were used inside the building. Theoretical dose rate calculations were performed using the Monte Carlo code MCNP6, and additional calculations were performed that compared the shielding factor for $^{137}$Cs and $^{134}$Cs. This work demonstrated the applicability of using MCNP6 for theoretical calculations of radioactive fallout scenarios. Furthermore, the work showed that the shielding effect for modular buildings is almost the same for $^{134}$Cs as for $^{137}$Cs.

General information
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Organisations: Center for Nuclear Technologies, The Hevesy Laboratory, Radioecology and Tracer Studies, Lund University
Contributors: Hinrichsen, Y., Finck, R., Östlund, K., Rääf, C., Andersson, K. G.
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Scopus rating (2017): CiteScore 2.26 SJR 0.989 SNIP 1.377
Web of Science (2017): Impact factor 2.263
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 2.39 SJR 0.956 SNIP 1.488
Web of Science (2016): Impact factor 2.31
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): CiteScore 2.62 SJR 1.147 SNIP 1.555
Web of Science (2015): Impact factor 2.047
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): CiteScore 2.54 SJR 1.061 SNIP 1.72
Web of Science (2014): Impact factor 2.483
BFI (2013): BFI-level 1
Scopus rating (2013): CiteScore 2.97 SJR 1.613 SNIP 2.059
Web of Science (2013): Impact factor 3.571
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): CiteScore 1.95 SJR 1.082 SNIP 1.71
Web of Science (2012): Impact factor 2.119
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): CiteScore 1.61 SJR 1.106 SNIP 1.638
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 1
Scopus rating (2010): SJR 0.913 SNIP 1.266
Web of Science (2010): Impact factor 1.466
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 1
Scopus rating (2009): SJR 0.956 SNIP 1.549
Web of Science (2009): Indexed yes
BFI (2008): BFI-level 1
Scopus rating (2008): SJR 0.752 SNIP 1.433
Web of Science (2008): Indexed yes
Scopus rating (2007): SJR 0.951 SNIP 1.257
Web of Science (2007): Indexed yes
Scopus rating (2006): SJR 0.799 SNIP 1.305
Web of Science (2006): Indexed yes
Scopus rating (2005): SJR 0.895 SNIP 1.403
Web of Science (2005): Indexed yes
Scopus rating (2004): SJR 0.753 SNIP 1.681
Web of Science (2004): Indexed yes
Scopus rating (2003): SJR 0.578 SNIP 0.916
Web of Science (2003): Indexed yes
Scopus rating (2002): SJR 0.595 SNIP 1.042
Web of Science (2002): Indexed yes
Scopus rating (2001): SJR 0.622 SNIP 1.101
Web of Science (2001): Indexed yes
Scopus rating (2000): SJR 1.08 SNIP 1.036
Web of Science (2000): Indexed yes
Scopus rating (1999): SJR 1.169 SNIP 1.216

Original language: English
Keywords: Shielding factor, Monte Carlo simulations, Experimental validation
DOIs: 10.1016/j.jenvrad.2018.04.005
Research output: Research - peer-review › Journal article – Annual report year: 2018
Introducing the concept of the isodose for optimisation of decontamination activities in a radioactive fallout scenario: Paper

In the recovery phase after a radioactive release incident, it is important to be able to focus decontamination operations on the areas that contribute most to the radiation dose. Monte Carlo simulations were applied to determine the shielding effect of a building against radiation from various directions, also giving information on the dose contributions at various locations inside the building from specific areas outside. The concept of the isodose was developed to optimise decontamination activities, and was applied as isodose lines to define the smallest areas that lead to a certain dose reduction through decontamination of areas surrounding the building. The shape and position of the isodose lines depend on the building’s geometry, wall thickness, and material, and on the observation point inside the building. Calculations have been made with a surface resolution of 1 m² for four observation points in a modular building, assuming depositions of 137Cs and 60Co on the ground surface and on the roof, as well as 1 cm below the ground surface to represent ground penetration. For example, a ten times as large area would have to be decontaminated to increase the dose reduction from 10% to 30%, if it is assumed that all the contamination is located at a depth of 1 cm.

General Information
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Publication Information
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Web of Science (2018): Indexed yes
BFI (2017): BFI-level 1
Scopus rating (2017): CiteScore 1.11 SJR 0.848 SNIP 0.898
Web of Science (2017): Impact factor 1.274
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 1.3 SJR 0.706 SNIP 1.075
Web of Science (2016): Impact factor 1.657
BFI (2015): BFI-level 1
Scopus rating (2015): CiteScore 1.33 SJR 0.777 SNIP 1.089
Web of Science (2015): Impact factor 1.581
BFI (2014): BFI-level 1
Scopus rating (2014): CiteScore 1.24 SJR 0.565 SNIP 1.104
Web of Science (2014): Impact factor 1.702
BFI (2013): BFI-level 1
Scopus rating (2013): CiteScore 0.86 SJR 0.405 SNIP 0.817
Web of Science (2013): Impact factor 1.319
BFI (2012): BFI-level 1
Scopus rating (2012): CiteScore 1.1 SJR 0.603 SNIP 1.234
Web of Science (2012): Impact factor 1.386
BFI (2011): BFI-level 1
Scopus rating (2011): CiteScore 1 SJR 0.691 SNIP 1.237
Web of Science (2011): Impact factor 1.388
BFI (2010): BFI-level 1
Scopus rating (2010): SJR 0.638 SNIP 1.052
Web of Science (2010): Impact factor 1.323
BFI (2009): BFI-level 1
Scopus rating (2009): SJR 0.453 SNIP 0.846
BFI (2008): BFI-level 1
Scopus rating (2008): SJR 0.395 SNIP 1.247
Joint Nordic nuclear research to strengthen nuclear emergency preparedness after the Fukushima accident

Contrary to most areas of Europe, the Nordic countries (Denmark, Finland, Iceland, Norway, Sweden, and the Faroe Islands) have for many years shared a regional research and development program on nuclear reactor safety and emergency preparedness - NKS. In spite of its project results having received great recognition and having been integrated in state-of-the-art emergency preparedness tools over the world, NKS as an organization does not seem well known outside the Nordic countries. Although the Fukushima accident had no health impact at all in Nordic areas, it taught a number of lessons of generic nature with respect to new R&D tasks that could further strengthen and secure future maintenance of the Nordic region's capability to effectively respond to such events. For broader inspiration, this paper briefly introduces the Nordic nuclear emergency preparedness cooperation channels and outlines the related NKS R&D project initiatives launched after the Fukushima accident, many of which should be of general interest also far outside the region. The paper is intended as an introduction to NKS with an invitation to explore its results. All project results are available cost-free on the NKS website.

General information
State: Published
Organisations: Center for Nuclear Technologies, The Hevesy Laboratory, Radioecology and Tracer Studies, Swedish Radiation Safety Authority, Icelandic Radiation Safety Authority, Nordic Nuclear Safety Research
Contributors: Andersson, K. G., Linde, C., Magnússon, S. M., Physant, F.
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Peer-reviewed: Yes

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Ratings:
BFI (2018): BFI-level 1
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BFI (2017): BFI-level 1
Scopus rating (2017): CiteScore 2.26 SJR 0.989 SNIP 1.377
Web of Science (2017): Impact factor 2.263
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 2.39 SJR 0.956 SNIP 1.488
Web of Science (2016): Impact factor 2.31
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): CiteScore 2.62 SJR 1.147 SNIP 1.555
Web of Science (2015): Impact factor 2.047
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): CiteScore 2.54 SJR 1.061 SNIP 1.72
Web of Science (2014): Impact factor 2.483
BFI (2013): BFI-level 1
Scopus rating (2013): CiteScore 2.97 SJR 1.613 SNIP 2.059
Web of Science (2013): Impact factor 3.571
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): CiteScore 1.95 SJR 1.082 SNIP 1.71
Web of Science (2012): Impact factor 2.119
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): CiteScore 1.61 SJR 1.106 SNIP 1.638
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 1
Scopus rating (2010): SJR 0.913 SNIP 1.266
Web of Science (2010): Impact factor 1.466
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 1
Scopus rating (2009): SJR 0.956 SNIP 1.549
Web of Science (2009): Indexed yes
BFI (2008): BFI-level 1
Scopus rating (2008): SJR 0.752 SNIP 1.433
Web of Science (2008): Indexed yes
Scopus rating (2007): SJR 0.951 SNIP 1.257
Web of Science (2007): Indexed yes
Scopus rating (2006): SJR 0.799 SNIP 1.305
Web of Science (2006): Indexed yes
Scopus rating (2005): SJR 0.895 SNIP 1.403
Web of Science (2005): Indexed yes
Scopus rating (2004): SJR 0.753 SNIP 1.681
Web of Science (2004): Indexed yes
Scopus rating (2003): SJR 0.578 SNIP 0.916
Web of Science (2003): Indexed yes
Scopus rating (2002): SJR 0.595 SNIP 1.042
Web of Science (2002): Indexed yes
Scopus rating (2001): SJR 0.622 SNIP 1.101
Web of Science (2001): Indexed yes
Scopus rating (2000): SJR 1.08 SNIP 1.036
Web of Science (2000): Indexed yes
Scopus rating (1999): SJR 1.169 SNIP 1.216

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Radioactivity in the Risø District July-December 2016

The environmental surveillance of the Risø environment was continued in July-December 2016. The mean concentrations in air were: 0.18±0.13 μBq m⁻³ of ¹³⁷Cs, 2.30±0.68 mBq m⁻³ of ⁷Be and 0.21±0.12 mBq m⁻³ of ²¹⁰Pb (±1 standard uncertainty). The depositions by precipitation at Risø in the second half of 2016 were: 0.046±0.006 Bq m⁻² of ¹³⁷Cs, 494±50 Bq m⁻² of ⁷Be, 24.9±2.2 Bq m⁻² of ²¹⁰Pb and <1.2 kBq m⁻² of ³H. The average background dose rate (TLD) at Risø (Zone I) was measured as 45 ± 2 nSv h⁻¹ compared with 45 ± 6 nSv h⁻¹ (±1 standard uncertainty) in the four zones around Risø.

General information
State: Published
Organisations: Center for Nuclear Technologies, The Hevesy Laboratory, Radioecology and Tracer Studies, Radiation Physics
Contributors: Nielsen, S. P., Andersson, K. G., Miller, A.
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Publication date: 2017

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Original language: English
(DTU-Nutech-R; No. 15(EN)).
Electronic versions:
Halv_rsrapport_Juni_2017.pdf
Research output: Research › Report – Annual report year: 2017

Physico-chemical properties of radionuclides emitted as particulate matter

This paper presents work done to improve the representation in European decision support tools of physico-chemical forms of radiocontaminants released to the atmosphere from a major nuclear power plant accident. The task is to accommodate those types of scenarios where fuel particles are at play. A methodology with associated parameters has been developed to improve modelling of the aerodynamic particle characteristics, and resultant deposition relations on different surface types, as well as estimates of resultant post-deposition environmental contaminant mobility/forced decontamination.

General information
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Contributors: Andersson, K. G.
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Peer-reviewed: Yes

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Web of Science (2018): Indexed yes
BFI (2017): BFI-level 1
Scopus rating (2017): CiteScore 0.22 SJR 0.177 SNIP 0.217
Web of Science (2017): Impact factor 0.225
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 0.34 SJR 0.237 SNIP 0.456
Web of Science (2016): Impact factor 0.388
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): CiteScore 0.33 SJR 0.252 SNIP 0.388
Web of Science (2015): Impact factor 0.508
BFI (2014): BFI-level 1
Scopus rating (2014): CiteScore 0.3 SJR 0.231 SNIP 0.318
Radioactivity in the Risø District January-June 2016

The environmental surveillance of the Risø environment was continued in January-June 2016. The mean concentrations in air were: 0.28±0.17 μBq m⁻³ of ¹³⁷ Cs, 2.58±1.21 mBq m⁻³ of ⁷ Be and 0.23±0.15 mBq m⁻³ of ²¹₀ Pb (±1 S.D.). The depositions by precipitation at Risø in the first half of 2016 were: 0.058±0.007 Bq m⁻² of ¹³⁷ Cs, 474±47 Bq m⁻² of ⁷ Be, 27.5±2.5 Bq m⁻² of ²¹₀ Pb and <0.7 kBq m⁻² of ³ H. The average background dose rate (TLD) at Risø (Zone I) was measured as 59 nSv h⁻¹ compared with 52 ± 2 nSv h⁻¹ (±1 S.D.) in the four zones around Risø.

General Information

State: Published

Organisations: Center for Nuclear Technologies, The Hevesy Laboratory, Radioecology and Tracer Studies, Radiation Physics

Contributors: Nielsen, S. P., Andersson, K. G., Miller, A.

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Radioactivity in the Risø District July-December 2015
The environmental surveillance of the Risø environment was continued in July-December 2015. The mean concentrations in air were: 0.24±0.18 μBq m⁻³ of ¹³⁷Cs, 2.71±0.88 mBq m⁻³ of ⁷Be and 0.28±0.20 mBq m⁻³ of ²¹⁰Pb (±1 S.D.). The depositions by precipitation at Risø in the second half of 2015 were: 0.085±0.011 Bq m⁻² of ¹³⁷Cs, 607±30 Bq m⁻² of ⁷Be, 59.6±4.2 Bq m⁻² of ²¹⁰Pb and 1.4±0.2 kBq m⁻² of ³H. The average background dose rate (TLD) at Risø (Zone I) was measured as 42 nSv h⁻¹ compared with 40 ± 2 nSv h⁻¹ (±1 S.D.) in the four zones around Risø.

General information
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Organisations: Center for Nuclear Technologies, The Hevesy Laboratory, Radioecology and Tracer Studies, Radiation Physics
Contributors: Nielsen, S. P., Andersson, K. G., Miller, A.
Number of pages: 26
Publication date: 2016

Radioactivity in the Risø District July-December 2014
The environmental surveillance of the Risø environment was continued in July - December 2014. The mean concentrations in air were: 0.31±0.24 μBq m⁻³ of ¹³⁷Cs, 2.70±1.13 mBq m⁻³ of ⁷Be and 0.28±0.22 mBq m⁻³ of ²¹⁰Pb (±1 S.D.; N = 26). The depositions by precipitation at Risø in the second half of 2014 were: 0.056 Bq m⁻² of ¹³⁷Cs, 730 Bq m⁻² of ⁷Be, 76.7 Bq m⁻² of ²¹⁰Pb and < 1.2 kBq m⁻² of ³H. The average background dose rate (TLD) at Risø (Zone I) was 42 nSv h⁻¹ compared with 51 ± 5 nSv h⁻¹ (±1 S.D.; N = 4) in the four zones around Risø.

General information
State: Published
Organisations: Center for Nuclear Technologies, Radioecology and Tracer Studies, Radiation Physics
Contributors: Nielsen, S. P., Andersson, K. G., Miller, A.
Number of pages: 24
Publication date: Jun 2015

An overview of current non-nuclear radioactive waste management in the Nordic countries and considerations on possible needs for enhanced inter-Nordic cooperation: Final report from a NKS-B activity commissioned by the Nordic Council of Ministers

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Electronic versions:
Halv_rsrappor_Juni_2015.pdf
Research output: Research › Report – Annual report year: 2015
This report is the final deliverable of a project commissioned by the Nordic Council of Ministers for NKS to assess the current situation in the Nordic countries with respect to management of non-nuclear radioactive waste. The ultimate goal was to examine if any needs could be identified for enhanced Nordic cooperation within the area. The radiation safety authorities in the Nordic countries were all asked to produce a current status report including thoughts about possible needs for enhanced cooperation. The material was presented and discussed at a meeting in Copenhagen of representatives of NKS and the Nordic authorities, and a number of ideas were derived with the perspective of possible further cooperation between the Nordic countries on the regulatory level, whereas more scientific based new work ideas were thought to be suited for an activity application for the next NKS call for proposals, in the autumn of 2015.

General information
State: Published
Organisations: Center for Nuclear Technologies, Radioecology and Tracer Studies, Swedish Radiation Safety Authority, Finnish Radiation and Nuclear Safety Authority, Norwegian Radiation Protection Authority, Danish Health Authority, Icelandic Radiation Safety Authority, FRIT
Number of pages: 91
Publication date: 2015

Management of Tritium in European Spallation Source
The European Spallation Source (ESS) will produce tritium via spallation and activation processes during operational activities. Within the location of ESS facility in Lund, Sweden site it is mandatory to demonstrate that the management strategy of the produced tritium ensures the compliance with the country regulation criteria. The aim of this paper is to give an overview of the different aspects of the tritium management in ESS facility. Besides the design parameter study of the helium coolant purification system of the target the consequences of the tritium releasing into the environment were also analyzed. Calculations shown that the annual release of tritium during the normal operations represents a small fraction from the estimated total dose. However, more refined calculations of migration of activated-groundwater should be performed for higher hydraulic conductivities, with the availability of the results on soil examinations. With the assumption of 100% release of tritium to the atmosphere during the occurring of the extreme accidents, it was found as well that the total dose complies with the constraint.

General information
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Organisations: Center for Nuclear Technologies, Radioecology and Tracer Studies, The Hevesy Laboratory, European Spallation Source ESS AB
Contributors: Ene, D., Andersson, K. G., Jensen, M., Nielsen, S. P., Severin, G.
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Journal: Fusion Science and Technology
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ISSN (Print): 1536-1055
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Web of Science (2018): Indexed yes
BFI (2017): BFI-level 1
Scopus rating (2017): CiteScore 0.96 SJR 0.383 SNIP 0.982
Web of Science (2017): Impact factor 0.991
New and recently finalised activities within the NKS Programmes for Nordic cooperation on nuclear reactor safety and emergency preparedness

Over the years, NKS has provided funding for hundreds of research activities in fields comprising reactor safety, decommissioning, nuclear and radiological emergency preparedness, and management of radioactive waste. Advanced technologies and methods developed under the NKS framework have been used within the Nordic countries as well as internationally. Two programme areas are defined under the NKS platform: The NKS-R programme on nuclear reactor safety and the NKS-B programme on emergency preparedness. Three articles, giving an introduction to NKS and its two programmes, were published in Radiation Regulator last year. This paper is aimed at providing a total overview of the NKS activities running in 2013 and 2014.

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Organisations: Center for Nuclear Technologies, Radioecology and Tracer Studies, Vattenfall, Icelandic Radiation Safety Authority, FRIT
Contributors: Andgren, K., Andersson, K. G., Magnússon, S. M., Physant, F.
Pages: 24-32
Publication date: 2015
Peer-reviewed: Yes

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Journal: Radiation Regulator
Volume: 2
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ISSN (Print): 2052-4846
Original language: English
Electronic versions:
NKS_paper_4_draft_RR_260214_g.pdf
New_and_recently_finalised_activities.pdf
Source: PublicationPreSubmission
Source-ID: 118780831
Research output: Research - peer-review ; Journal article – Annual report year: 2015

Predicted Radiation Exposure from Mining at Kvanefjeld: Introduction to Radiation, Review of Baseline Information, and Predicted Radiation Exposures from Kvanefjeld Mining, Mineral Processing and Refining

Baseline surveys of gamma radiation and environmental radioactivity have been carried out by Greenland Minerals and Energy Ltd (GMEL) to show existing levels in the town of Narsaq and in the Kvanefjeld project area. Radiation levels in Narsaq are low but elevated in the project area due the presence of large uranium and thorium deposits in Kvanefjeld. These deposits are also the reason that radon in outdoor air show elevated concentrations in Narsaq and in the project area. It is recommended that future monitoring of external exposure and radon should be based on measurement techniques using integrating dosimeters.

The Technical University of Denmark (DTU) has reviewed the impact of Kvanefjeld operations on the future workforce to estimate radiation doses to individuals. Calculations were performed with conservative assumptions that reveal the annual radiation dose to workers to be between 1 and 5 millisieverts (mSv). This range of annual doses is below the internationally accepted limits for occupational exposure of 20 mSv averaged over five consecutive years and 50 mSv in any single year. The radiation dose estimates calculated by DTU are consistent with actual measured radiation doses from uranium mines in other developed countries such as Australia and Canada. From a radiation dose perspective Kvanefjeld operations are not expected to be any worse than current uranium mining operations elsewhere as the uranium content is significantly lower.

DTU was engaged by GMEL as an independent reviewer of baseline surveys carried out and data obtained. DTU (former Risø National Laboratory) has five-decades of experience in dealing with naturally-occurring and man-made radioactivity and radiation in the environment covering research and development as well as consultancy.

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Original language: English
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Keywords: DTU-Nutech-11(EN), DTU-Nutech-11
Radioactivity in the Risø District January-June 2015

The environmental surveillance of the Risø environment was continued in January-June 2015. The mean concentrations in air were: 0.23±0.18 μBq m⁻³ of 137Cs, 2.19±0.91 μBq m⁻³ of 7Be and 0.13±0.05 μBq m⁻³ of 210Pb (±1 S.D.). The depositions by precipitation at Risø in the first half of 2015 were: 0.054±0.015 Bq m⁻² of 137Cs, 433±43 Bq m⁻² of 7Be, 22.5±4.5 Bq m⁻² of 210Pb and < 0.5 kBq m⁻² of ³H. The average background dose rate (TLD) at Risø (Zone I) was measured as 63 nSv h⁻¹ compared with 56 ± 3 nSv h⁻¹ (±1 S.D.) in the four zones around Risø.

General information
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Organisations: Center for Nuclear Technologies, Radioecology and Tracer Studies, Radiation Physics
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Electronic versions:
Radioactivity_in_the_Ris_District_January_June_2015.pdf
Research output: Research › Report – Annual report year: 2015

Improvement of radiological consequence estimation methodologies for NPP accidents in the ARGOS and RODOS decision support systems through consideration of contaminant physico-chemical forms

General information
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Organisations: Center for Nuclear Technologies, Radioecology and Tracer Studies, Norwegian University of Life Sciences , VÚJE Inc., Slovakia, Demokritos National Centre for Scientific Research
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Publication date: 2014

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Publisher: Norwegian Radiation Protection Authority
Editors: Strand, P., Brown, J., Jølde, T.
Electronic versions:
Improvement_of_radiological_consequence.pdf

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Oral Poster Presentations
Source: PublicationPreSubmission
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Research output: Research - peer-review › Article in proceedings – Annual report year: 2015

Radioactivity in the Risø District January-June 2014

The environmental surveillance of the Risø environment was continued in January-June 2014. The mean concentrations in air were: 0.47±0.45 μBq m⁻³ of 137Cs, 2.96±1.33 μBq m⁻³ of 7Be and 0.27±0.24 μBq m⁻³ of 210Pb (±1 S.D.; N = 26). The depositions by precipitation at Risø in the first half of 2013 were: 0.086 Bq m⁻² of 137Cs, 433 Bq m⁻² of 7Be, 39.9 Bq m⁻² of 210Pb and < 0.5 kBq m⁻² of ³H. The average background dose rate (TLD) at Risø (Zone I) was measured as 107 nSv h⁻¹ compared with 91 ± 6 nSv h⁻¹ (±1 S.D.; N = 4) in the four zones around Risø.

The TLD measurement results for this reporting period show a greater background level than normally expected. This is probably caused by unresolved measurement problems, and work is ongoing to identify and solve these problems.

General information
Radioactivity in the Risø District July-December 2013

The environmental surveillance of the Risø environment was continued in July - December 2013. The mean concentrations in air were: 0.20±0.08 μBq m⁻³ of 137Cs, 2.23±0.64 μBq m⁻³ of 7Be and 0.16±0.08 μBq m⁻³ of 210Pb (±1 S.D.; N = 26). The depositions by precipitation at Risø in the second half of 2012 were: 0.048 Bq m⁻² of 137Cs, 436 Bq m⁻² of 7Be, 31.3 Bq m⁻² of 210Pb and < 0.7 kBq m⁻² of 3H. The average background dose rate (TLD) at Risø (Zone I) was 44 nSv h⁻¹ compared with 43 ± 9 nSv h⁻¹ (±1 S.D.; N = 4) in the four zones around Risø.

The NKS-B Programme for Nordic cooperation on nuclear and radiological emergency preparedness, including measurement strategies, radioecology and waste management

The NKS platform for Nordic cooperation and competence maintenance in nuclear and radiological safety comprises two parallel programmes: the NKS-R programme on nuclear reactor safety and the NKS-B programme on emergency preparedness. This paper introduces the NKS-B programme and its current activities.
Decontamination tests in the recreational areas affected by the Chernobyl accident: efficiency of decontamination and long-term stability of the effects

The paper provides a review of the decontamination tests and the follow up monitoring program conducted by the Russian and Danish researchers in two recreational areas in the period 1995–2003. The recreational areas Novie Bobovichi and Muravinika consisted of sets of wooden and brick summer houses in forest-grassland surroundings. The sites are located on the territory of the Bryansk region (Russia) at a distance of about 180 km north-east of the Chernobyl Nuclear Power Plant. Before intervention began, the inventory of 137Cs in soil was determined at a level of 1000 kBq m⁻². The collaborative research project showed that use of simple countermeasures involving hand-tools and light machinery could reduce the external dose rate considerably, even though 10 years had passed since fallout of the Chernobyl radiocesium. The long-term monitoring of the recreational areas did not demonstrate significant re-contamination of cleaned ground plots within the time period of 15–17 years after intervention. The technologies and the methods implemented to clean up the recreational areas may be recommended for restoration of some Japanese sites that were strongly contaminated in 2011 as a result of the Fukushima accident.

General information
State: Published
Organisations: Center for Nuclear Technologies, Radioecology and Tracer Studies
Contributors: Ramzaev, V., Barkovsky, A., Mishine, A., Andersson, K. G.
Pages: 93-108
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Peer-reviewed: Yes

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Issue number: 2
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Research output: Research - peer-review • Journal article – Annual report year: 2013

ESS Technical Design Report
General information
State: Published
Organisations: Center for Nuclear Technologies, Radioecology and Tracer Studies, Department of Physics, Neutrons and X-rays for Materials Physics, The Hevesy Laboratory, Radiation Physics, Department of Energy Conversion and Storage, Atomic scale modelling and materials, European Spallation Source ESS AB, University of London, CEA, Helmholtz-Zentrum Berlin für Materialien und Energie, Paul Scherrer Institute, Linköping University, Technical University of Denmark
Number of pages: 690
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Publication information
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ISBN (Print): 978-91-980173-2-8
Original language: English
Electronic versions:
TDR_final
Source: PublicationPreSubmission
Source-ID: 110626393
Research output: Research - peer-review • Report – Annual report year: 2013

Modeling of the fate of radionuclides in urban sewer systems after contamination due to nuclear or radiological incidents
After an accidental radioactive contamination by aerosols in inhabited areas, the radiation exposure to man is determined by complex interactions between different factors such as dry or wet deposition, different types of ground surfaces, chemical properties of the radionuclides involved and building development as well as dependence on bomb construction e.g. design and geometry. At short-term, the first rainfall is an important way of natural decontamination: deposited radionuclides are washed off from surfaces and in urban areas the resulting contaminated runoff enters the sewer system and is collected in a sewage plant. Up to now the potential exposure caused by this process has received little attention and is estimated here with simulation models. The commercial rainfall-runoff model for urban sewer systems KANALpp
has been extended to include transport of radionuclides from surfaces through the drainage to various discharge facilities. The flow from surfaces is modeled by unit hydrographs, which produce boundary conditions for a system of 1d coupled flow and transport equations in a tube system. Initial conditions are provided by a map of surface contamination which is produced by geostatistical interpolation of g-dose rate measurements taking into account the detector environment. The corresponding methodology is implemented in the Inhabited Area Monitoring Module (IAMM) software module as part of the European decision system JRODOS. A hypothetical scenario is considered where a Radiation Dispersal Device (RDD) with Cs-137 is detonated in a small inhabited area whose drainage system is realistically modeled. The transition of deposited radionuclides due to rainfall into the surface runoff is accounted for by different nuclide-specific entrainment coefficients for paved and unpaved surfaces. The concentration of Cs-137 in water is calculated at the nodes of the drainage system and at the sewage treatment plant. The external exposure to staff of the treatment plant is estimated. For Cs-137 radiation levels in the plant are low since wash-off of cesium from surfaces is an ineffective process.
On the current needs in European decision support tools for contaminated areas

As part of the ongoing European project NERIS-TP, a revision has been made of some parameters influencing dose estimates in the European emergency management decision support systems RODOS and ARGOS. On the basis of survey data, the estimates of the time fractions typically spent indoors and outdoors over longer time periods have been revised. On the basis of measurement data, also new values for the natural ventilation rate governing early ingression of contaminants into dwellings have been derived for different parts of Europe. Other potential parameterisation improvements for the decision support systems are discussed. © 2013 EDP Sciences.

General information
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Organisations: Center for Nuclear Technologies, Radioecology and Tracer Studies
Contributors: Andersson, K. G.
Pages: S57-S64
Publication date: 2013
Peer-reviewed: Yes

Publication information
Journal: Radioprotection
Volume: 48
Issue number: Suppl.5
ISSN (Print): 0033-8451
Ratings:
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Original language: English

Keywords: Artificial intelligence, Civil defense, Risk management, Ventilation, Decision support systems

Electronic versions: On_the_current_needs_in_European_decision.pdf
Radioactivity in the Risø District January-June 2013
The environmental surveillance of the Risø environment was continued in January-June 2013. The mean concentrations in air were: 0.55±0.51 μBq m−3 of 137Cs, 2.96±1.18 μBq m−3 of 7Be and 0.26±0.25 μBq m−3 of 210Pb (±1 S.D.; N = 26). The depositions by precipitation at Risø in the first half of 2013 were: 0.074 Bq m−2 of 137Cs, 425 Bq m−2 of 7Be, 35.0 Bq m−2 of 210Pb and < 0.7 kBq m−2 of 3H. The average background dose rate (TLD) at Risø (Zone I) was measured as 136 nSv h−1 compared with 119 ± 16 nSv h−1 (±1 S.D.; N = 4) in the four zones around Risø.
TLD results for the period November 2012 – April 2013 are significantly higher than results for the periods before and after this one. No errors could be identified in raw data or calculations. It should be noted that the results for the following period (May-October 2013) are already available and generally show no increase in the levels compared with previous years. It is therefore assumed that the increase in dose values as shown in this report are related to an error on the TL measurement instrument that was found immediately after the measurements.

Radioactivity in the Risø District July-December 2012
The environmental surveillance of the Risø environment was continued in July-December 2012. The mean concentrations in air were: 0.32±0.31 μBq m−3 of 137Cs, 3.04±0.99 μBq m−3 of 7Be and 0.22±0.18 μBq m−3 of 210Pb (±1 S.D.; N = 26). The depositions by precipitation at Risø in the second half of 2012 were: 0.039 Bq m−2 of 137Cs, 615 Bq m−2 of 7Be, 40.3 Bq m−2 of 210Pb and < 0.6 kBq m−2 of 3H. The average background dose rate (TLD) at Risø (Zone I) was 54 nSv h−1 compared with 58 ± 8 nSv h−1 (±1 S.D.; N = 3) in the four zones around Risø.
The NKS programmes for Nordic cooperation on nuclear and radiological safety

NKS is a platform for Nordic cooperation and competence maintenance in nuclear and radiological safety, including emergency preparedness. It is an informal forum serving as an umbrella for Nordic initiatives and interests. It runs joint activities of interest to financing organisations and other end-users.

General information
State: Published
Organisations: Center for Nuclear Technologies, Radioecology and Tracer Studies, Fortum Power and Heat Oy, Icelandic Radiation Safety Authority, FRIT
Contributors: Andersson, K. G., Leino, K., Magnússon, S. M., Physant, F.
Pages: 54-57
Publication date: 2013
Peer-reviewed: Yes

The NKS-R Programme for Nordic cooperation on nuclear reactor safety including organisational issues and decommissioning of nuclear installations

General information
State: Published
Organisations: Center for Nuclear Technologies, Radioecology and Tracer Studies
Contributors: Leino, K., Andersson, K. G., Magnusson, S., Physant, F.
Pages: 96-100
Publication date: 2013
Peer-reviewed: Yes

This is NKS

General information
State: Published
Organisations: Center for Nuclear Technologies, Radioecology and Tracer Studies
Contributors: Andersson, K. G.
Publication date: 2013
Media of output: PowerPoint

Event information
Event: NKS Workshop on Radioanalytical Chemistry
Car-borne gamma spectrometry: a virtual exercise in emergency response

In recent years car-borne gamma spectrometry has expanded from its role as a geological survey platform to being a useful asset in searching for orphan sources and for surveying in the aftermath of an incident involving the release of radioactive materials. The opportunities for gaining practical experience in the field however are limited by cost considerations and practicability. These limitations are exacerbated by the fact that field data can differ significantly from data generated in the laboratory. As a means of exercising existing emergency measuring/surveying capability and introducing car-borne measurements to a larger group, a virtual exercise was devised. The exercise ORPEX (Orphan Sources and Fresh Fallout Virtual Exercise in Mobile Measurement) featured two typical emergency scenarios: a search for orphan sources and surveying to delineate fallout from a local release point. Synthetic spectral data were generated for point sources and inserted into genuine car-borne measurement data. Participants were presented with a typical software tool and data and were asked to report source locations and isotopes within a time limit. In the second scenario, synthetic data representing fallout from a local fire involving radioactive material were added to real car-borne data, participants being asked to produce maps identifying and characterising the regions of contamination. Fourteen individual organisations from seven different countries supplied results which indicated that for strong sources of isotopes with simple spectra featuring high energy peaks, location and identification was not a problem. Problems arose for isotopes with low energy signals or that presented a weak signal even when visible for extended periods. Experienced analysts tended to perform better in identification of sources irrespective of experience with mobile measurements whereas those with experience in such measurements were more confident in providing more precise estimates of location. The results indicated the need for the inclusion of less frequently encountered sources in field exercise related to mobile measurements.

General information
State: Published
Organisations: Center for Nuclear Technologies, Radioecology and Tracer Studies, Norwegian Radiation Protection Authority, University of Exeter, Geological Survey of Norway, Danish Emergency Management Agency, Icelandic Radiation Safety Authority
Contributors: Dowdall, M., Smethurst, M., Watson, R., Mauring, A., Aage, H., Andersson, K., Pálsson, S.
Pages: 68-77
Publication date: 2012
Peer-reviewed: Yes

Publication information
Journal: Journal of Environmental Radioactivity
Volume: 107
ISSN (Print): 0265-931X
Ratings:
BFI (2018): BFI-level 1
Web of Science (2018): Indexed yes
BFI (2017): BFI-level 1
Scopus rating (2017): CiteScore 2.26 SJR 0.989 SNIP 1.377
Web of Science (2017): Impact factor 2.263
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 2.39 SJR 0.956 SNIP 1.488
Web of Science (2016): Impact factor 2.31
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): CiteScore 2.62 SJR 1.147 SNIP 1.555
Web of Science (2015): Impact factor 2.047
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): CiteScore 2.54 SJR 1.061 SNIP 1.72
Web of Science (2014): Impact factor 2.483

This publication provides a detailed overview of the results and achievements of the IAEA programme called EMRAS (Environmental Modelling for Radiation Safety), which ran from 2003 to 2007. The activities of the various working groups focused on the compilation of a handbook of parameter values for the prediction of radionuclide transfer in temperate environments, on the test and comparison of models to assess the transfer of tritium and 14C to biota and humans, on the
validation of models for dose reconstruction due to 131I after the Chernobyl accident, on modelling the transfer of radionuclides in aquatic systems, on remediation of rural and urban sites with radioactive residues, and on the impact of environmental radioactivity on non-human species. The book concludes with a summary of the outcomes of the EMRAS programme and is accompanied by a CD-ROM which provides details of the work and the results of the working groups.

General information
State: Published
Organisations: Center for Nuclear Technologies, Radioecology and Tracer Studies
Number of pages: 67
Publication date: 2012

Publication information
Publisher: International Atomic Energy Agency
Original language: English
(IAEA Technical Documents Series; No. 1678).
Keywords: IAEA-TECDOC-1678
URLs:
Research output: Research › Book – Annual report year: 2012

Nordic Nuclear Safety Research (NKS) programme: Nordic cooperation on nuclear safety issues

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State: Published
Organisations: Center for Nuclear Technologies, Radioecology and Tracer Studies
Contributors: Andersson, K. G., Ekström, K., Gwynn, J., Magnússon, S., Physant, F.
Number of pages: 1
Publication date: 2012

Host publication information
Title of host publication: Proceedings of the IRPA13 conference
Publisher: International Radiation Protection Association
Electronic versions:
Nordic_Nuclear_Safety_Research.pdf
URLs:
http://www.irpa13glasgow.com/information/downloads/
Research output: Research › peer-review › Conference abstract in proceedings – Annual report year: 2012

On the current needs in European decision support tools for contaminated areas

One of the strategic objectives of the European NERIS platform on preparedness for nuclear and radiological emergency response and recovery, which was launched in 2010, is to promote exchange of information and views, and to identify needs for further technological developments in the field. An ongoing RTD activity supported by the European Commission deals with the practical implementation of the recently revised ICRP recommendations, e.g., through adaptation of the existing decision support systems ARGOS and RODOS. Examples are given of the outcome of this activity with respect to parameterisation in the decision support systems of indoor/outdoor air exchange and time budgets, considering recommendations on data sources and regional implementation, as well as the novel reference person concept. Other needs for technological developments for the decision support systems are discussed, particularly with respect to improved approaches for definition of source terms, radioecological parameters, and generic parameters to accommodate the differences between the radiological impacts of contamination originating from different types of incidents (e.g., considering the recommendations in ICRP Publication 96).

General information
State: Published
Organisations: Center for Nuclear Technologies, Radioecology and Tracer Studies
Contributors: Andersson, K. G.
Publication date: 2012
Peer-reviewed: No

Bibliographical note
Radioactivity in the Risø District January-June 2012
The environmental surveillance of the Risø environment was continued in January-June 2012. The mean concentrations in air were: 0.48±0.38 μBq m–3 of 137Cs, 3.69±1.79 mBq m–3 of 7Be and 0.21±0.20 mBq m–3 of 210Pb (±1 S.D.; N = 26). The depositions by precipitation at Risø in the first half of 2011 were: 0.052 Bq m–2 of 137Cs, 420 Bq m–2 of 7Be, 21.5 Bq m–2 of 210Pb and < 0.5 kBq m–2 of 3H. The average background dose rate (TLD) at Risø (Zone I) was 99 nSv h–1 compared with 89 ± 9 nSv h–1 (±1 S.D.; N = 4) in the four zones around Risø. TLD results for the period November 2011 – April 2012 are significantly higher than results for the periods before and after this one. Raw data and calculations have been checked without finding a reason why these results show larger doses. The results are close to the detection limit for these dosimeters and the higher results could be due to measurement uncertainties, but measurement errors cannot be excluded. The increased background dose rates measured with TLD’s are believed to be due to unidentified technical reasons. Increased levels in external gamma radiation at the Risø zones during November 2011 to April 2012 were neither identified from measurements of terrestrial dose rates with a NaI(Tl) detector nor from the permanent monitoring station at Risø operated by the Danish Emergency Management Agency.

Radioactivity in the Risø District July-December 2011
The environmental surveillance of the Risø environment was continued in July - December 2011. The mean concentrations in air were: 0.25±0.19 μBq m–3 of 137Cs, 2.81±1.71 mBq m–3 of 7Be and 0.23±0.18 mBq m–3 of 210Pb (±1 S.D.; N = 26). The depositions by precipitation at Risø in the second half of 2010 were: 0.102 Bq m–2 of 137Cs, 757 Bq m–2 of 7Be, 75.1 Bq m–2 of 210Pb and < 0.8 kBq m–2 of 3H. The average background dose rate (TLD) at Risø (Zone I) was 67 nSv h–1 compared with 66 ± 14 nSv h–1 (±1 S.D.; N = 3) in the four zones around Risø.
systems are called for, to introduce new knowledge and thereby improve prognoses.

The Nordic Nuclear Safety Research (NKS) Programme: Nordic Cooperation on Nuclear Safety

Assessing emergency situations and their aftermath in urban areas: The EMRAS II Urban Areas Working Group
Assessing emergency situations and their aftermath in urban areas: The EMRAS II Urban Areas Working Group

General information
State: Published
Publication date: 2011
Peer-reviewed: No
Event: Abstract from 2nd International Conference on Radioecology & Environmental Radioactivity, Hamilton, Canada.
Keywords: Radio ecology and tracers
Electronic versions:
ICRER abstract _Thiessen.pdf
Source: orbit
Source-ID: 312370
Research output: Research › Conference abstract for conference – Annual report year: 2011

Generic handbook for assisting in the management of contaminated inhabited areas in Europe following a radiological emergency: Final report of the EC-EURANOS project activity CAT1RTD02 and CAT1RTD04

General information
State: Published
Organisations: Radioecology and Tracer Studies, Radiation Research Division, Risø National Laboratory for Sustainable Energy
Number of pages: 317
Publication date: 2011

Publication information
Publisher: Commission of the European Communities
Volume: Version 2
Original language: English
(EUR; No. 24457)
Keywords: Radiation ecology and tracers
Source: orbit
Source-ID: 312294
Research output: Research › Report – Annual report year: 2011

Generic handbook for assisting in the management of contaminated inhabited areas in Europe following a radiological emergency: Final report of the EC-EURANOS project activity CAT1RTD01 and CAT1RTD03

General information
State: Published
Improving ingestion dose modelling for the ARGOS and RODOS decision support systems: A Nordic Initiative

A Nordic work group under the NKS-B activity PARDNOR has revised the input parameters in the ECOSYS model that is incorporated for ingestion dose modelling in the ARGOS and RODOS decision support systems. The new parameterisation takes into account recent measurement data, and targets the model for use in Nordic preparedness. The importance of some of the revisions is illustrated.

New threats and new challenges for radiological decision support

It is described how ongoing work will extend European standard decision support systems currently integrated in the nuclear power plant preparedness in many countries, to enable estimation of the radiological consequences of atmospheric dispersion of contaminants following a terror attack in a city. Factors relating to the contaminant release processes, dispersion, deposition and post deposition migration are discussed, and non-radiological issues are highlighted in relation to decision making.
Nordic re-parameterisation of the ECOSYS ingestion model

General information
State: Published
Organisations: Radioecology and Tracer Studies, Radiation Research Division, Risø National Laboratory for Sustainable Energy, Norwegian Radiation Protection Authority, Nord University, University of the Faroe Islands, University of Gothenburg, Finnish Radiation and Nuclear Safety Authority, VTT - Technical Research Centre of Finland, Icelandic Radiation Safety Authority
Publication date: 2011
Peer-reviewed: No
Event: Abstract from XVI Conference of the NSFS, Reykjavik, Iceland.
Keywords: Radio ecology and tracers
Electronic versions:
NSFS Reykjavik PardNor 2.pdf
Source: orbit
Source-ID: 312386
Research output: Research › Conference abstract for conference – Annual report year: 2011

On the requirements to establish a European radiological preparedness for malicious airborne dispersion scenarios

General information
State: Published
Organisations: Radioecology and Tracer Studies, Radiation Research Division, Risø National Laboratory for Sustainable Energy, Meteorology, Wind Energy Division, Danish Emergency Management Agency, Prolog Development Center A/S
Publication date: 2011
Peer-reviewed: No
Event: Abstract from 2nd International Conference on Radioecology & Environmental Radioactivity, Hamilton, Canada.
Keywords: Radio ecology and tracers
Electronic versions:
ICRER RDD.pdf
Source: orbit
Source-ID: 312378
Research output: Research › Conference abstract for conference – Annual report year: 2011

On the requirements to establish a European radiological preparedness for malicious airborne dispersion scenarios

European computerised decision support systems are currently targeted for large accidental atmospheric contaminant releases from nuclear installations. To make these systems applicable also for malicious dispersion events, such as ‘dirty bomb’ blasts, a series of modifications and extensions are necessary. Also European decision support handbooks need supplementary sections to cover the features of these types of scenarios. An overview is given of the requirements.

General information
State: Published
Organisations: Center for Nuclear Technologies, Department of Wind Energy, Danish Emergency Management Agency, Prolog Development Center A/S
Pages: S589-S594
Publication date: 2011
Peer-reviewed: Yes

Publication information
Journal: Radioprotection
Volume: 46
Orphan Sources and Fresh Fallout: Virtual Exercise in Mobile Measurement (ORPEX)

In recent years carborne gamma spectrometry has expanded from its role as a geological survey platform to serving as a useful asset in the field of emergency response to radiological and nuclear situations. Its two main applications are searching for orphan sources and for surveying in the aftermath of an accident involving the release of radioactive materials. Despite this expansion, the opportunities for gaining practical experience in the field are limited by cost considerations and practicability. These limitations are exacerbated by the fact that data generated and displayed in the field differ significantly from gamma spectral data generated in a laboratory environment. As a means of exercising existing emergency measuring/surveying capability and introducing carborne measurements to a larger group, a virtual exercise was devised. The exercise ORPEX (Orphan Sources and Fresh Fallout Virtual Exercise in Mobile Measurement) featured two typical emergency scenarios in which carborne measuring systems might be deployed: firstly a search for multiple orphan sources and secondly surveying to delineate patchy fallout from a local release point. In the first scenario, synthetic spectral data were generated for imaginary point sources and inserted into genuine carborne measurements from in the Trondheim area of Norway. Participants were presented with a typical software tool and data in a range of typical formats and asked to report the source locations and isotopes within a time limit. In the second scenario, synthetic spectral data representing fallout from a local fire involving radioactive material were added to real carborne data from the Trondheim area. Participants were asked to produce maps that identify and characterise the regions of contamination within the same time limit. Fourteen individual organisations from seven different countries supplied results. Results from participants indicate that for strong sources of isotopes with simple spectra featuring high energy peaks, location and identification is not a problem. Problems arise for isotopes with low energy signals or that present a weak signal even when visible for extended periods. Experienced analysts tended to perform better in identification of sources even if they were inexperienced in mobile measurements whereas those with experience in such measurements were more confident in providing more precise estimates of location. The results indicated the need for the inclusion of less frequently encountered sources in field exercise related to mobile measurements.

General information

State: Published
Organisations: Radioecology and Tracer Studies, Radiation Research Division, Risø National Laboratory for Sustainable Energy, Norwegian Radiation Protection Authority, University of Exeter, Danish Emergency Management Agency, Icelandic Radiation Protection Institute
Contributors: Dowdall, M., Smethurst, M., Andersson, K. G., Aage, H., Pálsson, S.
Number of pages: 59
Publication date: 2011

Publication information

Place of publication: Roskilde
Publisher: NKS
ISBN (Print): 978-87-7893-324-9
Original language: English (NKS-252).
Keywords: Mobile gamma spectrometry, Orphan sources, Exercise

Electronic versions:
nks252_e.pdf
Source: orbit
Source-ID: 316321
Research output: Research › Report – Annual report year: 2011

Parametric improvement for the ingestion dose module of the European ARGOS and RODOS decision support systems

General information

State: Published
Organisations: Radioecology and Tracer Studies, Radiation Research Division, Risø National Laboratory for Sustainable Energy, Norwegian Radiation Protection Authority, University of the Faroe Islands, University of Gothenburg, Finnish Radiation and Nuclear Safety Authority, VTT - Technical Research Centre of Finland, Icelandic Radiation Safety Authority
Publication date: 2011
Peer-reviewed: No
Event: Abstract from 2nd International Conference on Radioecology & Environmental Radioactivity, Hamilton, Canada.
Keywords: Radio ecology and tracers
Parametric improvement for the ingestion dose module of the European ARGOS and RODOS decision support systems
The European decision support systems ARGOS and RODOS rely on the ECOSYS model for prognoses of ingestion
doses. ECOSYS needs an update of various parameter values to provide reliable estimates. This paper reports on some
results of a Nordic initiative to derive parameter values that are specific to Nordic conditions, as well as to improve generic
parameter values in ECOSYS, taking into account the host of useful measurement data accumulated since ECOSYS was
created.

General information
State: Published
Organisations: Center for Nuclear Technologies, Radioecology and Tracer Studies, Norwegian Radiation Protection
Authority, University of the Faroe Islands, University of Gothenburg, Finnish Radiation and Nuclear Safety Authority, VTT -
Technical Research Centre of Finland, Icelandic Radiation Safety Authority
Contributors: Andersson, K. G., Nielsen, S. P., Thørring, H., Joensen, H., Isaksson, M., Kostiainen, E., Suolanen, V.,
Pálsson, S.
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Peer-reviewed: Yes

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BFI (2018): BFI-level 1
Web of Science (2018): Indexed yes
BFI (2017): BFI-level 1
Scopus rating (2017): CiteScore 0.22 SJR 0.177 SNIP 0.217
Web of Science (2017): Impact factor 0.225
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 0.34 SJR 0.237 SNIP 0.456
Web of Science (2016): Impact factor 0.388
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): CiteScore 0.33 SJR 0.252 SNIP 0.388
Web of Science (2015): Impact factor 0.508
BFI (2014): BFI-level 1
Scopus rating (2014): CiteScore 0.3 SJR 0.231 SNIP 0.318
Web of Science (2014): Impact factor 0.54
BFI (2013): BFI-level 1
Scopus rating (2013): CiteScore 0.24 SJR 0.264 SNIP 0.325
Web of Science (2013): Impact factor 0.596
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): CiteScore 0.13 SJR 0.238 SNIP 0.232
Web of Science (2012): Impact factor 0.444
ISI indexed (2012): ISI indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): CiteScore 0.33 SJR 0.26 SNIP 0.588
Web of Science (2011): Impact factor 1
PardNor – PARameters for ingestion Dose models for NORdic areas - Status report for the NKS-B activity 2010

The ECOSYS foodchain model is built into the European standard decision support systems ARGOS and RODOS, which are integrated in the preparedness for radiological events in the Nordic countries. However, a review has revealed that a number of parameters in ECOSYS do not reflect the current state-of-the-art knowledge, and do not adequately represent Nordic conditions. Improved and country/region specific data is required for ECOSYS to give trustworthy results. It is the aim of the PardNor activity to collect new data, and thus enable reliable use of ECOSYS for scenarios involving contamination of Nordic food production areas. In the reported work period of the PardNor activity, the parameters governing the contaminant deposition processes were revised, and an important point here is that contaminant particle sizes were taken into account, which has so far not been the case in ECOSYS. Both dry and wet deposition processes were addressed. New datasets were derived for dry deposition, whereas for wet deposition (washout, rainout, snow scavenging), which cannot be addressed directly in ECOSYS, but must be dealt with elsewhere in the ARGOS and RODOS decision support systems, a new methodology was suggested on the basis of available measurement data. Also parameters governing the natural weathering processes of contaminants on crops and bare soil were revised, and it was demonstrated that precipitation has a strong influence on the weathering half-life, which should be included in ECOSYS. Both for deposition and weathering parameters, a special effort was made to retrieve measurement data of Nordic origin. A series of calculations were made with the ECOSYS model to show the effect of introducing new and improved parameter values for dry deposition and weathering processes. The parameter revision was found to have great effect on the ECOSYS estimates of food contamination levels for a ‘Chernobyl-like’ NPP accident scenario, and the effect could well be even greater for other conceivable types of release scenarios. Finally, the dependence of measured global fallout contamination levels on precipitation rates was highlighted in a separate section.

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Contributors: Nielsen, S. P., Andersson, K. G.
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Publication information
Place of publication: Roskilde
Publisher: NKS Secretariat
Radioactivity in the Risø District January-June 2011

The environmental surveillance of the Risø environment was continued in July - December 2010. The mean concentrations in air were: 0.34±0.26 μBq m⁻³ of 137Cs, 2.58±1.09 mBq m⁻³ of 7Be and 0.23±0.19 mBq m⁻³ of 210Pb (±1 S.D.; N = 26). The depositions by precipitation at Risø in the second half of 2010 were: 0.045 Bq m⁻² of 137Cs, 744 Bq m⁻² of 7Be, 47.0 Bq m⁻² of 210Pb and <1.2 kBq m⁻² of 3H. The average background dose rate (TLD) at Risø (Zone I) was 65 nSv h⁻¹ compared with 58 ± 7 nSv h⁻¹ (±1 S.D.; N = 4) in the four zones around Risø.

General Information
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Organisations: Radioecology and Tracer Studies, Radiation Research Division, Risø National Laboratory for Sustainable Energy, Radiation Physics
Contributors: Nielsen, S. P., Andersson, K. G., Miller, A.
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Place of publication: Roskilde
Publisher: Danmarks Tekniske Universitet, Risø Nationallaboratoriet for Bæredygtig Energi
ISBN (Print): 978-87-550-3951-3
Original language: English
Keywords: Radio ecology and tracers, Risø-R-1800, Risø-R-1800(EN)
Electronic versions:
ris-r-1800.pdf
Source: orbit
Source-ID: 315722
Research output: Research › Report – Annual report year: 2011

Radioactivity in the Risø District July-December 2010

The environmental surveillance of the Risø environment was continued in July - December 2010. The mean concentrations in air were: 0.34±0.26 μBq m⁻³ of 137Cs, 2.58±1.09 mBq m⁻³ of 7Be and 0.23±0.19 mBq m⁻³ of 210Pb (±1 S.D.; N = 26). The depositions by precipitation at Risø in the second half of 2010 were: 0.045 Bq m⁻² of 137Cs, 744 Bq m⁻² of 7Be, 47.0 Bq m⁻² of 210Pb and <1.2 kBq m⁻² of 3H. The average background dose rate (TLD) at Risø (Zone I) was 65 nSv h⁻¹ compared with 58 ± 7 nSv h⁻¹ (±1 S.D.; N = 4) in the four zones around Risø.

General Information
State: Published
Organisations: Radioecology and Tracer Studies, Radiation Research Division, Risø National Laboratory for Sustainable Energy, Radiation Physics
Contributors: Nielsen, S. P., Andersson, K. G., Miller, A.
Number of pages: 24
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Publication information
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Publisher: Danmarks Tekniske Universitet, Risø Nationallaboratoriet for Bæredygtig Energi
ISBN (Print): 978-87-550-3907-0
Original language: English
Keywords: Radio ecology and tracers, Risø-R-1779, Risø-R-1779(EN)
Electronic versions:
ris-r-1779.pdf
Source: orbit
Source-ID: 277235
Research output: Research › Report – Annual report year: 2011
Revision of deposition and weathering parameters for the ingestion dose module (ECOSYS) of the ARGOS and RODOS decision support systems

The ECOSYS model is the ingestion dose model integrated in the ARGOS and RODOS decision support systems for nuclear emergency management. The parameters used in this model have however not been updated in recent years, where the level of knowledge on various environmental processes has increased considerably. A Nordic work group has carried out a series of evaluations of the general validity of current ECOSYS default parameters. This paper specifically discusses the parameter revisions required with respect to the modelling of deposition and natural weathering of contaminants on agricultural crops, to enable the trustworthy prognostic modelling that is essential to ensure justification and optimisation of countermeasure strategies. New modelling approaches are outlined, since it was found that current ECOSYS approaches for deposition and natural weathering could lead to large prognostic errors.

General information
State: Published
Organisations: Radioecology and Tracer Studies, Radiation Research Division, Risø National Laboratory for Sustainable Energy, Norwegian Radiation Protection Authority, University of the Faroe Islands, University of Gothenburg, Finnish Radiation and Nuclear Safety Authority, VTT - Technical Research Centre of Finland, Icelandic Radiation Safety Authority
Pages: 1024-1031
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Peer-reviewed: Yes

Publication information
Journal: Journal of Environmental Radioactivity
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ISSN (Print): 0265-931X
Ratings:
BFI (2018): BFI-level 1
Web of Science (2018): Indexed yes
BFI (2017): BFI-level 1
Scopus rating (2017): CiteScore 2.26 SJR 0.989 SNIP 1.377
Web of Science (2017): Impact factor 2.263
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 2.39 SJR 0.956 SNIP 1.488
Web of Science (2016): Impact factor 2.31
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): CiteScore 2.62 SJR 1.147 SNIP 1.555
Web of Science (2015): Impact factor 2.047
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): CiteScore 2.54 SJR 1.061 SNIP 1.72
Web of Science (2014): Impact factor 2.483
BFI (2013): BFI-level 1
Scopus rating (2013): CiteScore 2.97 SJR 1.613 SNIP 2.059
Web of Science (2013): Impact factor 3.571
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): CiteScore 1.95 SJR 1.082 SNIP 1.71
Web of Science (2012): Impact factor 2.119
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 1
Decision aiding handbooks for managing contaminated food production systems, drinking water and inhabited areas in Europe

Three handbooks have been developed, in conjunction with a wide range of stakeholders to assist in the management of contaminated food production systems, inhabited areas and drinking water following a radiological incident. The handbooks are aimed at national and local authorities, central government departments and agencies, emergency services, radiation protection experts, the agriculture and food production sectors, industry and others who may be affected. The handbooks include management options for application in the different phases of an incident. Sources of contamination considered in the handbooks include nuclear accidents and radiological dispersion devices; the most relevant radionuclides are included. The handbooks are divided into several sections which provide supporting scientific and technical information; an analysis of the factors influencing recovery; compendia of comprehensive, state-of-the-art datasheets for around 100 management options and guidance on planning in advance. A decision-aiding framework comprising colour coded selection tables, look-up tables and decision trees and several worked examples are also included. The handbooks can be used as a preparatory tool, under non-crisis conditions, to engage stakeholders and to develop local and regional plans. The handbooks can also be applied as part of the decision-aiding process to develop a recovery strategy following an incident. In addition, the handbooks are useful for training purposes and during emergency exercises. To realise their full potential, the handbooks should be customised at national, regional and local levels. © EDP Sciences, 2010

General information
Demonstration of generic handbooks for assisting in the management of contaminated food production systems and inhabited areas in Europe

Two handbooks have been developed in conjunction with a wide range of stakeholders that provide assistance in the management of contaminated food production systems and inhabited areas following a radiological incident. Emergency centres in Member States not involved in the development of these handbooks were invited to take part in demonstration activities to establish whether the handbooks would be useful for the purposes of contingency planning and accident management. Some eight centres took part. Emergency exercises or similar events based on scenarios involving contamination of the foodchain and inhabited areas were used. Feedback from all of the demonstrations was positive with constructive criticism given on how to improve the navigation, structure and format of the handbooks. All of the key improvements highlighted during the demonstrations were taken into account and included in version 2 of the handbooks. Two additional demonstrations took place in Denmark and Slovakia to investigate the appropriateness and applicability of a stakeholder participatory process when applying the handbooks. These stakeholders expressed their willingness to discuss the issues at stake from contamination of food production systems and inhabited areas and gave a clear commitment to continue the process. © EDP Sciences, 2010

General information
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Contributors: Nisbet, A., Andersson, K. G., Duranova, T.
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Peer-reviewed: Yes

Publication information
Journal: Radioprotection
Volume: 45
Issue number: 5
ISSN (Print): 0033-8451
Ratings:
BFI (2018): BFI-level 1
Web of Science (2018): Indexed yes
BFI (2017): BFI-level 1
Scopus rating (2017): CiteScore 0.22 SJR 0.177 SNIP 0.217
Web of Science (2017): Impact factor 0.225
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 0.34 SJR 0.237 SNIP 0.456
Web of Science (2016): Impact factor 0.388
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Effect of Nordic ciets on ECOSYS model predictions of ingestion doses

The ECOSYS model is used to estimate ingestion dose in the ARGOS and RODOS decision support systems for nuclear emergency management. It is recommended that nation-specific values for several parameters are used in the model. However, this is generally overlooked when the systems are used in practice. We have estimated first year ingestion doses in two scenarios with wet and dry deposition of 137Cs, using the ECOSYS model. We calculated doses for each country using national dietary data while keeping all other parameters at their default values. These dose calculations were then used to estimate the variation in ingestion doses resulting from the variation in the diets only. The dietary data demonstrated that the average consumption of milk, meat and vegetables varied by a factor of 2–4 among the Nordic countries. For both scenarios, the ingestion doses varied by a factor of about 2, among the countries. For all countries, the model predictions were most sensitive to changes in milk, beef and wheat consumption. The results demonstrate that recent and reliable dietary data are required to reliably estimate ingestion doses.
Emerging needs for physicochemical analyses in connection with radiological terror preparedness

General information
State: Published
Organisations: Radioecology and Tracer Studies, Radiation Research Division, Risø National Laboratory for Sustainable Energy
Contributors: Andersson, K. G.
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Pages: 23-23
Publication date: 2010

Host publication information
Title of host publication: Workshop on Radioanalytical Chemistry for Radioecology and Waste Management: Report, evaluation, abstracts and full papers of presentations
Place of publication: Roskilde
Publisher: NKS
Editor: Hou, X.
Keywords: Radiation research and nuclear technologies, Radioecology and tracers
Electronic versions:
NKS-218.pdf
Source: orbit
Source-ID: 259838
Research output: Research › Conference abstract in proceedings – Annual report year: 2010

Implementation in ARGOS of ERMIN and AGRICP
The ERMIN model is a new implement developed to enable estimation of the radiological consequences in inhabited areas of accidents in nuclear installations. Similarly, AGRICP is a model developed to enable estimation of the radiological consequences of contamination of agricultural production areas. This paper provides a short overview of the background of the two models and describes the features enabled through their implementation in the ARGOS decision support system. The integration allows calculation of both dose rates and doses in particular areas, and can be used to evaluate the effectiveness and costs of countermeasure strategies. © EDP Sciences, 2010

General information
State: Published
Improving ingestion dose modelling for the ARGOS and RODOS decision support systems: A Nordic initiative

General information
State: Published
Organisations: Radioecology and Tracer Studies, Radiation Research Division, Risø National Laboratory for Sustainable Energy, Norwegian Radiation Protection Authority, University of the Faroe Islands, University of Gothenburg, Finnish Radiation and Nuclear Safety Authority, VTT - Technical Research Centre of Finland, Icelandic Radiation Safety Authority
Number of pages: 326
Pages: 87-87
Publication date: 2010

Malevolent use of radioactive materials: An international exercise in the analysis of gamma-spectrometric data
The past years have seen a broadening in the focus of emergency preparedness and first response towards situations involving the malevolent use of radioactive materials in a variety of contexts. Many of these contexts are such that first responders and responsible authorities may be faced with isotopes and activities that present significant challenges with respect to identification and quantification using gamma ray spectrometry. The MALRAD international exercise was designed to provide a practice opportunity for authorities and laboratories to work with synthetic gamma-spectrometric data generated in response to seven hypothetical scenarios involving radioactive materials. Scenarios were based as far as practical upon earlier events and participants had one week to provide as much information as possible about the sources based on the provided data. Results indicate that in cases of single isotopes, irrespective of the detector type involved, all participants were in a position to identify sources and provide estimates of activity. For situations involving shielded sources or special nuclear materials most participants were in a position to provide indications as to what the sources were but only a few participants were in a position to provide detailed information.

General information
State: Published
Organisations: Radioecology and Tracer Studies, Radiation Research Division, Risø National Laboratory for Sustainable Energy, Norwegian Radiation Protection Authority, Institute for Energy Technology, Icelandic Radiation Safety Authority
Contributors: Dowdall, M., Andersson, K. G., Pálsson, S., Sidhu, R. S.
Pages: 1789-1797
Publication date: 2010
Peer-reviewed: Yes
ISSN (Print): 0969-8043
Ratings:
BFI (2018): BFI-level 1
Web of Science (2018): Indexed yes
BFI (2017): BFI-level 1
Scopus rating (2017): CiteScore 1.15 SJR 0.528 SNIP 0.973
Web of Science (2017): Impact factor 1.123
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 1.17 SJR 0.537 SNIP 1.027
Web of Science (2016): Impact factor 1.128
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): CiteScore 1.15 SJR 0.547 SNIP 0.999
Web of Science (2015): Impact factor 1.136
BFI (2014): BFI-level 1
Scopus rating (2014): CiteScore 1.27 SJR 0.574 SNIP 1.203
Web of Science (2014): Impact factor 1.231
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): CiteScore 1.24 SJR 0.526 SNIP 0.953
Web of Science (2013): Impact factor 1.056
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): CiteScore 1.29 SJR 0.671 SNIP 1.151
Web of Science (2012): Impact factor 1.179
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): CiteScore 1.21 SJR 0.644 SNIP 1.137
Web of Science (2011): Impact factor 1.172
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 1
Scopus rating (2010): SJR 0.715 SNIP 1.098
Web of Science (2010): Impact factor 0.999
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 1
Scopus rating (2009): SJR 0.613 SNIP 1.186
Web of Science (2009): Indexed yes
BFI (2008): BFI-level 1
Scopus rating (2008): SJR 0.689 SNIP 1.177
Web of Science (2008): Indexed yes
Scopus rating (2007): SJR 0.582 SNIP 1.151
Web of Science (2007): Indexed yes
Scopus rating (2006): SJR 0.592 SNIP 1.092
Web of Science (2006): Indexed yes
Scopus rating (2005): SJR 0.48 SNIP 0.816
Web of Science (2005): Indexed yes
Scopus rating (2004): SJR 0.825 SNIP 1.131
Scopus rating (2003): SJR 0.517 SNIP 0.754
Web of Science (2003): Indexed yes
New threats and new challenges for radiological decision support

General information
State: Published
Organisations: Radioecology and Tracer Studies, Radiation Research Division, Risø National Laboratory for Sustainable Energy, Meteorology, Wind Energy Division, Prolog Development Center A/S, Danish Emergency Management Agency
Number of pages: 326
Pages: 189-189
Publication date: 2010

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Title of host publication: Abstracts
Publisher: Nordic Society for Radiation Protection
Keywords: Radiation research and nuclear technologies, Radio ecology and tracers
URLs:
Source: orbit
Source-ID: 268134
Research output: Research › Conference abstract in proceedings – Annual report year: 2010

PardNor - PARameters for ingestion Dose models for NORdic areas: Status report for the NKS-B activity 2009

General information
State: Published
Organisations: Radioecology and Tracer Studies, Radiation Research Division, Risø National Laboratory for Sustainable Energy, Norwegian Radiation Protection Authority, Fröðskaparsetur Føroya, University of Gothenburg, Finnish Radiation and Nuclear Safety Authority, VTT - Technical Research Centre of Finland, Geislavarnir Rikisins
Number of pages: 50
Publication date: 2010

Publication information
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ISBN (Print): 9788778932792
Original language: English (NKS-210).
Keywords: Radiation research and nuclear technologies, Radioecology and tracers
Electronic versions:
NKS-210.pdf
Source: orbit
Source-ID: 258613
Research output: Research › Report – Annual report year: 2010
Radioactivity in the Risø District January-June 2010
The environmental surveillance of the Risø environment was continued in January - June 2010. The mean concentrations in air were: 0.99±1.11 μBq m–3 of 137Cs, 4.56±2.71 mBq m–3 of 7Be and 0.49±0.57 mBq m–3 of 210Pb (±1 S.D.; N = 26). The depositions by precipitation at Risø in the first half of 2010 were: 0.095 Bq m–2 of 137Cs, 521 Bq m–2 of 7Be, 48.2 Bq m–2 of 210Pb and <0.5 kBq m–2 of 3H. The average background dose rate (TLD) at Risø (Zone I) was 106 nSv h–1 compared with 91 ± 4 nSv h–1 (±1 S.D.; N = 4) in the four zones around Risø.

General information
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Organisations: Radioecology and Tracer Studies, Radiation Research Division, Risø National Laboratory for Sustainable Energy, Radiation Physics
Contributors: Nielsen, S. P., Andersson, K. G., Miller, A.
Number of pages: 24
Publication date: 2010

Publication information
Place of publication: Roskilde
Publisher: Danmarks Tekniske Universitet, Risø Nationallaboratoriet for Bæredygtig Energi
ISBN (Print): 978-87-550-3863-9
Original language: English
(Denmark. Forskningscenter Risoe. Risoe-R; No. 1756(EN)).
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Electronic versions:
ris-r-1756.pdf
Source: orbit
Source-ID: 272314
Research output: Research › Report – Annual report year: 2010

Radioactivity in the Risø District July - December 2009
Risø environment was continued in July - December 2009. The mean concentrations in air were: 0.34±0.19 μBq m–3 of 137Cs, 3.55±1.09 mBq m–3 of 7Be and 0.25±0.11 mBq m–3 of 210Pb (±1 S.D.; N = 26). The depositions by precipitation at Risø in the second half of 2009 were: 0.031 Bq m–2 of 137Cs, 586 Bq m–2 of 7Be, 34.2 Bq m–2 of 210Pb and < 1.0 kBq m–2 of 3H. The average background dose rate (TLD) at Risø (Zone I) was 72 nSv h–1 compared with 63 ± 5 nSv h–1 (±1 S.D.; N = 4) in the four zones around Risø.

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State: Published
Organisations: Radioecology and Tracer Studies, Radiation Research Division, Risø National Laboratory for Sustainable Energy, Radiation Physics
Contributors: Nielsen, S. P., Andersson, K. G., Miller, A.
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Publisher: Danmarks Tekniske Universitet, Risø Nationallaboratoriet for Bæredygtig Energi
ISBN (Print): 978-87-550-3871-4
Original language: English
(Denmark. Forskningscenter Risoe. Risoe-R; No. 1737(rev.1)(EN)).
Keywords: Radiation research and nuclear technologies, Radio ecology and tracers, Risø-R-1737, Risø-R-1737(EN)
Electronic versions:
ris-r-1737.pdf
Source: orbit
Source-ID: 265140
Research output: Research › Report – Annual report year: 2010

Airborne radioactive contamination in inhabited areas

General information
State: Published
Organisations: Radioecology and Tracer Studies, Radiation Research Division, Risø National Laboratory for Sustainable Energy
Contributors: Andersson, K. G. (ed.)
Calculating the consequences of recovery, a European model for inhabited areas

The European Model for Inhabited Areas (ERMIN) was developed to allow a user to explore different recovery options following the contamination of an urban environment with radioactive material and to refine an appropriate strategy for the whole region affected. The input data include a description of the environment, initial deposition of radionuclides on to a reference surface and a description of countermeasures. Output information includes the average doses to members of the public from external exposure to gamma and beta radiation from deposited radionuclides and inhalation of resuspended radioactivity, the contamination on urban surfaces, the activity concentration in air from resuspension, the doses to workers undertaking the recovery work, the quantity and activity of waste generated and the cost and work required to implement the countermeasure. ERMIN has been designed to be implemented as a tool that supports the approach of decision-makers and allows the area to be broken down into smaller regions where different conditions prevail and different countermeasure packages are enacted.

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Peer-reviewed: Yes

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Journal: Radioprotection - Revue de la Societé Francaise de Radioprotection
Volume: 44
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Ratings: BFI (2018): BFI-level 1
Countermeasures for inhabited areas (with focus on late phase)

General information
State: Published
Organisations: Radioecology and Tracer Studies, Radiation Research Division, Risø National Laboratory for Sustainable Energy
Contributors: Andersson, K. G.
Publication date: 2009
Peer-reviewed: No
Keywords: Radioecology and tracer studies, Nuclear technologies
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Research output: Research › Paper – Annual report year: 2009

Countermeasures for reduction of dose in contaminated inhabited areas

General information
State: Published
Organisations: Radioecology and Tracer Studies, Radiation Research Division, Risø National Laboratory for Sustainable Energy
Contributors: Andersson, K. G.
Number of pages: 348
Pages: 217-258
Publication date: 2009

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Title of host publication: Airborne radioactive contamination in inhabited areas
Publisher: Elsevier
Editor: Andersson, K. G.
ISBN (Print): 978-0-08-044989-0
(Radioactivity in the Environment, Vol. 15).
Keywords: Radioecology and tracer studies, Nuclear technologies
Source: orbit
Source-ID: 252723
Research output: Research › Book chapter – Annual report year: 2009

"Dirty bomb" explosion in a city area: What do we need to know for preparedness

General information
State: Published
Organisations: Radioecology and Tracer Studies, Radiation Research Division, Risø National Laboratory for Sustainable Energy
Contributors: Andersson, K. G.
Number of pages: 32
Pages: 6-7
Publication date: 2009

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Title of host publication: Final report from the NKS NordThreat seminar
Publisher: NKS
ISBN (Print): 978-87-7893-275-4
(NKS-206).
Keywords: Radioecology and tracer studies, Nuclear technologies
Electronic versions:
NKS-206.pdf
Source: orbit
Source-ID: 252856
Research output: Research › Conference abstract in proceedings – Annual report year: 2009
Dose modelling for ‘dirty bomb’ scenarios - an ARGOS DSS feature under development
The world of today is not only facing the risk of accidents (e.g., in nuclear facilities, as considered in the EURANOS project). Also other types of emergencies, notably involving radiological terrorism, pose a threat. Acts of terror would be most likely to take place in a city, where the greatest number of people could become directly affected. Current versions of European decision support systems are inapplicable in this context, as they do not take into account the specific characteristics of ‘dirty bomb’ scenarios, with respect to radionuclides (dose conversion factors), initial physicochemical forms, blast contaminant transformations, plume height and propagation, deposition velocities, post-deposition migration and clearance, as well as countermeasure effectiveness. This problem is being addressed for a new version of the ARGOS decision support system.

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State: Published
Organisations: Radioecology and Tracer Studies, Radiation Research Division, Risø National Laboratory for Sustainable Energy, Meteorology, Wind Energy Division, Prolog Development Center A/S, Danish Emergency Management Agency
Publication date: 2009
Peer-reviewed: No
Event: Abstract from Final EURANOS contractors meeting, Madrid, Spain.
Keywords: Radioecology and tracer studies, Nuclear technologies
Source: orbit
Source-ID: 253533
Research output: Research › Conference abstract for conference – Annual report year: 2009

EcoDoses: Improving radiological assessment of doses to man from terrestrial ecosystems: A status report for the NKS-B activity 2006

General information
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Organisations: Radioecology and Tracer Studies, Radiation Research Division, Risø National Laboratory for Sustainable Energy
Number of pages: 47
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Electronic versions:
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Source-ID: 242265
Research output: Research › Report – Annual report year: 2009

Effect of variable consumption habits in the Nordic populations on ECOSYS model predictions of ingestion dose

General information
State: Published
Organisations: Radioecology and Tracer Studies, Radiation Research Division, Risø National Laboratory for Sustainable Energy, Norwegian Radiation Protection Authority, Fröðskaparsetur Feröya, University of Gothenburg, Finnish Radiation and Nuclear Safety Authority, VTT - Technical Research Centre of Finland, Geislavarnir Rikisins
Publication date: 2009

Host publication information
Title of host publication: Proceedings (online)
Publisher: Argentine Radiation Protection Society
Keywords: Radioecology and tracer studies, Nuclear technologies
Electronic versions:
spni_paper.doc
Emerging needs for physicochemical analyses in connection with radiological terror preparedness

General information
State: Published
Organisations: Radioecology and Tracer Studies, Radiation Research Division, Risø National Laboratory for Sustainable Energy
Contributors: Andersson, K. G.
Publication date: 2009

Event information
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Location: Risø, Denmark
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Electronic versions:
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Source-ID: 253725
Research output: Research › Sound/Visual production (digital) – Annual report year: 2009

Estimation of doses in inhabited areas

General information
State: Published
Organisations: Radioecology and Tracer Studies, Radiation Research Division, Risø National Laboratory for Sustainable Energy, Health Protection Agency
Contributors: Andersson, K. G., Jones, J. A., Charnock, T. W.
Number of pages: 348
Pages: 147-185
Publication date: 2009

Host publication information
Title of host publication: Airborne radioactive contamination in inhabited areas
Publisher: Elsevier
Editor: Andersson, K. G.
ISBN (Print): 978-0-08-044989-0
(Radioactivity in the Environment, Vol. 15).
Keywords: Radioecology and tracer studies, Nuclear technologies
Source: orbit
Source-ID: 252722
Research output: Research › peer-review › Book chapter – Annual report year: 2009

EURANOS. Generic handbook for assisting in the management of contaminated food production systems in Europe following a radiological emergency

The handbook for food production systems has been developed as a result of a series of UK and European initiatives involving a wide range of stakeholders. It is aimed at national and local authorities, central government departments and agencies, radiation protection experts, agriculture and food production sectors and others who may be affected. The handbook is a living document that requires updating from time to time to remain state-of-the-art and customisation of the generic handbook is an essential part of its use within individual countries. The handbook includes management options for application in the pre-release, emergency and longer term phases of an incident. Sources of contamination considered in the handbook are nuclear accidents, radiological dispersion devices and satellite accidents. Agricultural and domestic food production systems are considered, including the gathering of free foods from the wild. The handbook is divided into several independent sections comprising: supporting scientific and technical information; an analysis of the factors influencing recovery; compendia of comprehensive, state-of-the-art datasheets for more than 40 management options; guidance on planning in advance; a decision-aiding framework comprising colour coded selection tables for each production system and look-up tables to assist in the elimination of options; and several worked examples. The handbook can be used as a preparatory tool, under non-crisis conditions to engage stakeholders and to develop local and regional plans. The handbook can be applied as part of the decision-aiding process to develop a recovery strategy following an incident. In addition, the handbook is useful for training purposes and during emergency exercises. The handbook for food production systems complements the two other handbooks for inhabited areas and drinking water supplies.
EURANOS. Generic handbook for assisting in the management of contaminated inhabited areas in Europe following a radiological emergency

The handbook for inhabited areas has been developed as a result of a series of European and UK initiatives that started in the early 1990s. It is aimed at national and local authorities, central government departments and agencies, radiation protection experts, emergency services, the water industry and others who may be affected. The handbook is a living document that requires updating from time to time to remain state-of-the-art and customisation of the generic handbook is an essential part of its use within individual countries. The handbook includes management options for application in the early and medium-longer term phases of an incident. Sources of contamination considered in the handbook are nuclear accidents, radiological dispersion devices and satellite accidents. Inhabited areas are characterised by a number of different surfaces i.e. buildings; roads and paved areas; soils, grass and plants; trees and shrubs. The handbook is divided into several independent sections comprising: supporting scientific and technical information; an analysis of the factors influencing recovery; compendia of comprehensive, state-of-the-art datasheets for more than 50 management options; guidance on planning in advance; a decision-aiding framework comprising colour coded selection tables for each surface, decision trees for establishing monitoring priorities and look-up tables to assist in the elimination of options; and several worked examples. The handbook can be used as a preparatory tool, under non-crisis conditions to engage stakeholders and to develop local and regional plans. The handbook can be applied as part of the decision-aiding process to develop a recovery strategy following an incident. In addition, the handbook is useful for training purposes and during emergency exercises. The handbook for inhabited areas complements the two other handbooks for food production systems and drinking water supplies.

EURANOS. The Handbook Users Group (HUG)

Three handbooks to assist in the management of contaminated food production systems, inhabited areas and drinking water supplies have been developed in conjunction with a wide range of stakeholders in Europe. These handbooks are living documents that will require updating from time to time to remain state-of-the-art. To address this need, a handbook users’ group (HUG) was established in 2007 to provide a platform for maintaining the handbooks and to build a network of users for both the generic handbooks and any subsequently customised versions. A web site was set up (www.euneresa.net) to facilitate information exchange. Emergency centres in Member States not involved in the development of the handbooks were invited to take part in demonstration activities to establish whether the handbooks were useful for the purposes of contingency planning and accident management. Results from the demonstrations were discussed with the HUG steering group who then made recommendations to the handbook developers on how the handbooks could be improved in the future. Updates have been made and version 2 of the generic handbooks will be published in 2009. In the future, it is likely that the HUG will join with other EURANOS user groups to form the basis of a European platform on post-accident preparedness and management.
Modelling remediation options for urban contamination situations

The impact on a population from an event resulting in dispersal and deposition of radionuclides in an urban area could be significant, in terms of both the number of people affected and the economic costs of recovery. The use of computer
models for assessment of urban contamination situations and remedial options enables the evaluation of a variety of situations or alternative recovery strategies in contexts of preparedness or decision-making. At present a number of models and modelling approaches are available for different purposes. This paper summarizes the available modelling approaches, approaches for modelling countermeasure effectiveness, and current sources of information on parameters related to countermeasure effectiveness. Countermeasure information must be applied with careful thought as to its applicability for the specific situation being modelled. Much of the current information base comes from the Chernobyl experience and would not be applicable for all types of situations.

**General information**

State: Published
Contributors: Thiessen, K., Andersson, K. G., Charnock, T., Gallay, F.
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Peer-reviewed: Yes

**Publication information**

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BFI (2018): BFI-level 1
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Web of Science (2017): Impact factor 2.263
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 2.39 SJR 0.956 SNIP 1.488
Web of Science (2016): Impact factor 2.31
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): CiteScore 2.62 SJR 1.147 SNIP 1.555
Web of Science (2015): Impact factor 2.047
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): CiteScore 2.54 SJR 1.061 SNIP 1.72
Web of Science (2014): Impact factor 2.483
BFI (2013): BFI-level 1
Scopus rating (2013): CiteScore 2.97 SJR 1.613 SNIP 2.059
Web of Science (2013): Impact factor 3.571
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): CiteScore 1.95 SJR 1.082 SNIP 1.71
Web of Science (2012): Impact factor 2.119
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): CiteScore 1.61 SJR 1.106 SNIP 1.638
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 1
Scopus rating (2010): SJR 0.913 SNIP 1.266
Web of Science (2010): Impact factor 1.466
Modelling the long-term consequences of a hypothetical dispersal of radioactivity in an urban area including remediation alternatives

The Urban Remediation Working Group of the International Atomic Energy Agency's EMRAS (Environmental Modelling for Radiation Safety) program was organized to address issues of remediation assessment modelling for urban areas contaminated with dispersed radionuclides. The present paper describes the second of two modelling exercises. This exercise was based on a hypothetical dispersal of radioactivity in an urban area from a radiological dispersal device, with reference surface contamination at selected sites used as the primary input information. Modelling endpoints for the exercise included radionuclide concentrations and external dose rates at specified locations, contributions to the dose rates from individual surfaces, and annual and cumulative external doses to specified reference individuals. Model predictions were performed for a “no action” situation (with no remedial measures) and for selected countermeasures. The exercise provided an opportunity for comparison of three modelling approaches, as well as a comparison of the predicted effectiveness of various countermeasures in terms of their short-term and long-term effects on predicted doses to humans. (C) 2009 Elsevier Ltd. All rights reserved.

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Peer-reviewed: Yes

Publication information
NKS-B PardNor: Improved ingestion dose modelling for Nordic decision support

General information
State: Published
Organisations: Radioecology and Tracer Studies, Radiation Research Division, Risø National Laboratory for Sustainable Energy, Norwegian Radiation Protection Authority, University of Gothenburg, University of the Faroe Islands, Finnish Radiation and Nuclear Safety Authority, Geislavarnir Rikisins, VTT - Technical Research Centre of Finland
Number of pages: 82
Pages: 47-50
Publication date: 2009

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Title of host publication: Proceedings of the NKS-R and NKS-B Joint Summary Seminar
Place of publication: Roskilde
Publisher: Nordisk Kernesikkerhedsforskning
Keywords: Radioecology and tracer studies, Nuclear technologies
Electronic versions:
nks-201.pdf
Source: orbit
Source-ID: 250008
Research output: Research › Article in proceedings – Annual report year: 2009

NKS-B URBHAND: Handbook for Nordic decision support for contaminated inhabited areas

General information
State: Published
Organisations: Radioecology and Tracer Studies, Radiation Research Division, Risø National Laboratory for Sustainable Energy, Finnish Radiation and Nuclear Safety Authority, Institute for Energy Technology, Lund University
Contributors: Andersson, K. G., Ammann, M., Backe, S., Rosén, K.
Number of pages: 82
Pages: 70-72
Publication date: 2009

Host publication information
Title of host publication: Proceedings of the NKS-R and NKS-B Joint Summary Seminar
Place of publication: Roskilde
Publisher: Nordisk Kernesikkerhedsforskning
Keywords: Radioecology and tracer studies, Nuclear technologies
On the Requirements to Optimise Restoration of Radioactively Contaminated Soil Areas

General information
State: Published
Organisations: Radioecology and Tracer Studies, Radiation Research Division, Risø National Laboratory for Sustainable Energy
Contributors: Andersson, K. G., Qiao, J., Hansen, V.
Number of pages: 520
Pages: 419-432
Publication date: 2009

Host publication information
Title of host publication: Contaminated Soils: Environmental Impact, Disposal and Treatment
Publisher: Nova Science Publishers
Editor: Steinberg, R.
ISBN (Print): 978-1-60741-791-0
(Environmental Remediation Technologies, Regulations and Safety).
Keywords: Radiation research and nuclear technologies, Radio ecology and tracers
Source: orbit
Source-ID: 268126
Research output: Research › Book chapter – Annual report year: 2010

PardNor - PARameters for ingestion Dose models for NORdic areas: Status report for the NKS-B activity 2008

General information
State: Published
Organisations: Radioecology and Tracer Studies, Radiation Research Division, Risø National Laboratory for Sustainable Energy, Norwegian Radiation Protection Authority, Fróðskaparsetur Føroya, University of Gothenburg, Finnish Radiation and Nuclear Safety Authority, VTT - Technical Research Centre of Finland, Geislavarnir Rikisins
Number of pages: 68
Publication date: 2009

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Place of publication: Roskilde
Publisher: NKS
ISBN (Print): 978-87-7893-251-8
Original language: English
(NKS-185).
Keywords: Radioecology and tracer studies, Nuclear technologies
Electronic versions:
NKS-185.pdf
Source: orbit
Source-ID: 242263
Research output: Research › Report – Annual report year: 2009

Proficiency Test in the Analysis of Gamma Spectra for Malevolent Radiological Situations (MALRAD)
The MALRAD activity was intended to provide an exercise activity with respect to gamma ray spectrometric response to malevolent situations involving radioactive sources. Such situations can often be characterised by high activity sources in difficult contexts where the response is by necessity conducted with less than optimal instrumentation. Seven scenarios were developed based on previous incidents where possible and gamma spectral data and other information was disseminated to participants who were given one week to respond to each scenario with as much information as possible. In total 14 individual laboratories responded. The majority of laboratories were in a position to satisfactorily identify sources where single sources were used in situations with no complicating factors. For those scenarios involving heavy shielding some difficulties were encountered due to distortion of the spectrum from that which would normally be viewed as characteristic for the isotope in question. Special nuclear materials such as reprocessed enriched uranium and weapons grade plutonium provided different challenges and there were indications in the responses from participants of unfamiliarity with these materials.
Remediation techniques for different contaminated ecosystems and their effectiveness

Requirements for estimation of doses from contaminants dispersed by a 'dirty bomb' explosion in an urban area

The ARGOS decision support system is currently being extended to enable estimation of the consequences of terror attacks involving chemical, biological, nuclear and radiological substances. This paper presents elements of the framework that will be applied in ARGOS to calculate the dose contributions from contaminants dispersed in the atmosphere after a 'dirty bomb' explosion. Conceptual methodologies are presented which describe the various dose components on the basis of knowledge of time-integrated contaminant air concentrations. Also the aerosolisation and atmospheric dispersion in a city of different types of conceivable contaminants from a 'dirty bomb' are discussed.
An assessment of cumulative external doses from Chernobyl fallout for a forested area in Russia using the optically stimulated luminescence from quartz inclusions in bricks

Optically stimulated luminescence (OSL) has been used for estimation of the accumulated doses in quartz inclusions obtained from two fired bricks, extracted in July 2004 from a building located in the forested surroundings of the recreational area Novie Bobovichi, the Bryansk Region, Russia. The area was significantly contaminated by Chernobyl fallout with initial (CS)-C-137 ground deposition level of similar to 1.1 MBq m(-2). The accumulated OSL doses in sections of the bricks varied from 141 to 207 mGy, of which between 76 and 146 mGy are attributable to Chernobyl fallout. Using the OSL depth-dose profiles obtained from the exposed bricks and the results from a gamma-ray-survey of the area, the Chernobyl-related cumulative gamma-ray dose for a point detector located in free air at a height of 1 m above the ground in the study area was estimated to be ca. 240 mGy for the time period starting on 27 April 1986 and ending on 31 July 2004. This result is in good agreement with the result of deterministic modelling of the cumulative gamma-ray dose in free air above undisturbed ground from the Chernobyl source in the Bryansk Region. Over the same time period, the external
Chernobyl-related dose via forest pathway for the most exposed individuals (e.g., forest workers) is estimated to be similar to 39 mSv. Prognosis for the external exposure from 1986 to 2056 is presented and compared with the predictions given by other investigators of the region. (C) 2008 Elsevier Ltd. All rights reserved.

**General information**

**State:** Published

**Organisations:** Radiation Physics, Radiation Research Division, Risø National Laboratory for Sustainable Energy, Radioecology and Tracer Studies

**Contributors:** Ramzaev, V., Bøtter-Jensen, L., Thomsen, K. J., Andersson, K. G., Murray, A.

**Pages:** 1154-1164

**Publication date:** 2008

**Peer-reviewed:** Yes

**Publication information**

**Journal:** Journal of Environmental Radioactivity

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- BFI (2018): BFI-level 1
- Web of Science (2018): Indexed yes
- BFI (2017): BFI-level 1
- Scopus rating (2017): CiteScore 2.26 SJR 0.989 SNIP 1.377
- Web of Science (2017): Impact factor 2.263
- Web of Science (2017): Indexed yes
- BFI (2016): BFI-level 1
- Scopus rating (2016): CiteScore 2.39 SJR 0.956 SNIP 1.488
- Web of Science (2016): Impact factor 2.31
- Web of Science (2016): Indexed yes
- BFI (2015): BFI-level 1
- Scopus rating (2015): CiteScore 2.62 SJR 1.147 SNIP 1.555
- Web of Science (2015): Impact factor 2.047
- Web of Science (2015): Indexed yes
- BFI (2014): BFI-level 1
- Scopus rating (2014): CiteScore 2.54 SJR 1.061 SNIP 1.72
- Web of Science (2014): Impact factor 2.483
- BFI (2013): BFI-level 1
- Scopus rating (2013): CiteScore 2.97 SJR 1.613 SNIP 2.059
- Web of Science (2013): Impact factor 3.571
- ISI indexed (2013): ISI indexed yes
- Web of Science (2013): Indexed yes
- BFI (2012): BFI-level 1
- Scopus rating (2012): CiteScore 1.95 SJR 1.082 SNIP 1.71
- Web of Science (2012): Impact factor 2.119
- ISI indexed (2012): ISI indexed yes
- Web of Science (2012): Indexed yes
- BFI (2011): BFI-level 1
- Scopus rating (2011): CiteScore 1.61 SJR 1.106 SNIP 1.638
- ISI indexed (2011): ISI indexed yes
- Web of Science (2011): Indexed yes
- BFI (2010): BFI-level 1
- Scopus rating (2010): SJR 0.913 SNIP 1.266
- Web of Science (2010): Impact factor 1.466
- Web of Science (2010): Indexed yes
- BFI (2009): BFI-level 1
- Scopus rating (2009): SJR 0.956 SNIP 1.549
ARGOS and ‘dirty bombs’

General information
State: Published
Organisations: Radioecology and Tracer Studies, Radiation Research Division, Risø National Laboratory for Sustainable Energy
Contributors: Andersson, K. G.
Publication date: 2008
Peer-reviewed: No
Keywords: Nuclear technologies
Source: orbit
Source-ID: 222866
Research output: Research › Paper – Annual report year: 2008

Calculating the consequences of recovery: A European model for inhabited areas

General information
State: Published
Organisations: Radioecology and Tracer Studies, Radiation Research Division, Risø National Laboratory for Sustainable Energy, Meteorology, Wind Energy Division
Pages: 52-55
Publication date: 2008
Correction of model predictions for the radioactive contamination of the environment with data assimilation

General information
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Organisations: Radioecology and Tracer Studies, Radiation Research Division, Risø National Laboratory for Sustainable Energy
Contributors: Kaiser, J., Gering, F., Andersson, K. G., Charnock, T., Hoe, S., Jacobsen, L.
Pages: 130-133
Publication date: 2008

Host publication information
Title of host publication: Proceedings : Part 1: Oral and oral poster presentations
Place of publication: Østerås (NO)
Publisher: Norwegian Radiation Protection Authority
Editors: Strand, P., Brown, J., Jølle, T.
ISBN (Print): 978-82-90362-25-1
Source: orbit
Source-ID: 228897
Research output: Research › Article in proceedings – Annual report year: 2008

Decision support handbook for recovery of contaminated inhabited areas

General information
State: Published
Organisations: Radioecology and Tracer Studies, Radiation Research Division, Risø National Laboratory for Sustainable Energy, Finnish Radiation and Nuclear Safety Authority, Institute for Energy Technology, Lund University
Contributors: Andersson, K. G., Ammann, M., Backe, S., Rosén, K.
Number of pages: 143
Publication date: 2008

Publication information
Publisher: Nordic Nuclear Safety Research
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(NKS-175).
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NKS-175.pdf
URLs:
http://www.risoe.dtu.dk/rispubl/NKS/nks-175.pdf

Bibliographical note
NKS-175
Source: orbit
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Research output: Research › Report – Annual report year: 2008

'Dirty bomb' attack in a city area: Requirements to estimate consequences of contaminant dispersion

General information
State: Published
Organisations: Radioecology and Tracer Studies, Radiation Research Division, Risø National Laboratory for Sustainable Energy, Meteorology, Wind Energy Division
Pages: 44-47
Publication date: 2008

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Title of host publication: Proceedings : Part 1: Oral and oral poster presentations
Place of publication: Østerås (NO)
Publisher: Norwegian Radiation Protection Authority
Estimation of health hazards resulting from a radiological terrorist attack in a city

In recent years, the concern for protection of urban populations against terror attacks involving radiological, biological or chemical substances has attracted increasing attention. It sets new demands to decision support and consequence assessment tools, where the focus has traditionally been on accidental exposure. The aim of the present study was to illustrate issues that need to be considered in evaluating the radiological consequences of a 'dirty bomb' explosion. This is done through a worked example of simplified calculations of relative dose contributions for a specific 'dirty bomb' scenario leading to atmospheric dispersion of Sr-90 contamination over a city area. Also, the requirements of atmospheric dispersion models for such scenarios are discussed.
Implementation of mechanical decontamination for reduction of external exposure at the territory of the Bryansk Region

General information
State: Published
Organisations: Radioecology and Tracer Studies, Radiation Research Division, Risø National Laboratory for Sustainable Energy
Contributors: Ramzaev, V., Barkovsky, A., Mishin, A., Vorobiev, B., Andersson, K. G.
Pages: 23-27
Publication date: 2008
**Improvement of modelling capabilities for assessing urban contamination: The EMRAS Urban Remediation Working Group**

**General information**

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Peer-reviewed: Yes

**Publication information**

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Volume: 66
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BFI (2018): BFI-level 1
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BFI (2017): BFI-level 1
Scopus rating (2017): CiteScore 1.15 SJR 0.528 SNIP 0.973
Web of Science (2017): Impact factor 1.123
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 1.17 SJR 0.537 SNIP 1.027
Web of Science (2016): Impact factor 1.128
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): CiteScore 1.15 SJR 0.547 SNIP 0.999
Web of Science (2015): Impact factor 1.136
BFI (2014): BFI-level 1
Scopus rating (2014): CiteScore 1.27 SJR 0.574 SNIP 1.203
Web of Science (2014): Impact factor 1.231
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): CiteScore 1.24 SJR 0.526 SNIP 0.953
Web of Science (2013): Impact factor 1.056
ISI indexed (2013): ISI indexed yes
New developments to support decision-making in contaminated inhabited areas following incidents involving a release of radioactivity to the environment

General information
State: Published
Organisations: Radioecology and Tracer Studies, Radiation Research Division, Risø National Laboratory for Sustainable Energy, Meteorology, Wind Energy Division
Pages: 439-454
Publication date: 2008
Peer-reviewed: Yes
PardNor - PARameters for ingestion Dose models for NORDic areas

General information
State: Published
Organisations: Radioecology and Tracer Studies, Radiation Research Division, Risø National Laboratory for Sustainable Energy
Contributors: Nielsen, S. P., Andersson, K. G.
Number of pages: 58
Publication date: 2008

Publication information
Publisher: Nordic Nuclear Safety Research
ISBN (Print): 978-87-7893-240-2
Original language: English
(NKS-174).
Electronic versions:
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URLs:
Source: orbit
Source-ID: 223464
Research output: Research › Report – Annual report year: 2008

137Cs and 90Sr in live and dead reindeer lichens (genera Cladonia) from the "Kraton-3" underground nuclear explosion site

General information
State: Published
Organisations: Radioecology and Tracer Studies, Radiation Research Division, Risø National Laboratory for Sustainable Energy
Contributors: Ramzaev, V., Mishine, A., Kaduka, M., Basalaeva, L., Brown, J., Andersson, K. G.
Pages: 84-99
Publication date: 2007
Peer-reviewed: Yes

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Issue number: 2
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Ratings:
BFI (2018): BFI-level 1
Web of Science (2018): Indexed yes
BFI (2017): BFI-level 1
Scopus rating (2017): CiteScore 2.26 SJR 0.989 SNIP 1.377
Web of Science (2017): Impact factor 2.263
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 2.39 SJR 0.956 SNIP 1.488
Web of Science (2016): Impact factor 2.31
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): CiteScore 2.62 SJR 1.147 SNIP 1.555
Web of Science (2015): Impact factor 2.047
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): CiteScore 2.54 SJR 1.061 SNIP 1.72
Web of Science (2014): Impact factor 2.483
BFI (2013): BFI-level 1
Scopus rating (2013): CiteScore 2.97 SJR 1.613 SNIP 2.059
Web of Science (2013): Impact factor 3.571
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): CiteScore 1.95 SJR 1.082 SNIP 1.71
Web of Science (2012): Impact factor 2.119
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): CiteScore 1.61 SJR 1.106 SNIP 1.638
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 1
Scopus rating (2010): SJR 0.913 SNIP 1.266
Web of Science (2010): Impact factor 1.466
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 1
Scopus rating (2009): SJR 0.956 SNIP 1.549
Web of Science (2009): Indexed yes
BFI (2008): BFI-level 1
Scopus rating (2008): SJR 0.752 SNIP 1.433
Web of Science (2008): Indexed yes
Scopus rating (2007): SJR 0.951 SNIP 1.257
Web of Science (2007): Indexed yes
Scopus rating (2006): SJR 0.799 SNIP 1.305
Web of Science (2006): Indexed yes
Scopus rating (2005): SJR 0.895 SNIP 1.403
Web of Science (2005): Indexed yes
Scopus rating (2004): SJR 0.753 SNIP 1.681
Web of Science (2004): Indexed yes
Scopus rating (2003): SJR 0.578 SNIP 0.916
Web of Science (2003): Indexed yes
Scopus rating (2002): SJR 0.595 SNIP 1.042
Web of Science (2002): Indexed yes
Scopus rating (2001): SJR 0.622 SNIP 1.101
Web of Science (2001): Indexed yes
Dry deposition of elemental iodine on skin, hair, and clothing from air

General information
State: Published
Organisations: Radioecology and Tracer Studies, Radiation Research Division, Risø National Laboratory for Sustainable Energy
Contributors: Hou, X., Andersson, K. G., Roed, J., Byskov, A., Roed, T.
Pages: 133-143
Publication date: 2007
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Journal: Journal of Radioanalytical and Nuclear Chemistry
Volume: 271
ISSN (Print): 0236-5731
Ratings:
BFI (2018): BFI-level 1
Web of Science (2018): Indexed yes
BFI (2017): BFI-level 1
Scopus rating (2017): CiteScore 1.14 SJR 0.47 SNIP 0.738
Web of Science (2017): Impact factor 1.181
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 1.24 SJR 0.521 SNIP 0.831
Web of Science (2016): Impact factor 1.282
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): CiteScore 0.99 SJR 0.454 SNIP 0.719
Web of Science (2015): Impact factor 0.983
BFI (2014): BFI-level 1
Scopus rating (2014): CiteScore 1.09 SJR 0.453 SNIP 0.826
Web of Science (2014): Impact factor 1.034
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): CiteScore 1.44 SJR 0.502 SNIP 1.152
Web of Science (2013): Impact factor 1.415
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): CiteScore 1.26 SJR 0.542 SNIP 0.899
Web of Science (2012): Impact factor 1.467
ISI indexed (2012): ISI indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): CiteScore 1.32 SJR 0.526 SNIP 0.867
Web of Science (2011): Impact factor 1.52
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 1
Scopus rating (2010): SJR 0.493 SNIP 0.667
Web of Science (2010): Impact factor 0.777
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 1
Scopus rating (2009): SJR 0.385 SNIP 0.723
Web of Science (2009): Indexed yes
BFI (2008): BFI-level 1
Scopus rating (2008): SJR 0.442 SNIP 0.804
Web of Science (2008): Indexed yes
Scopus rating (2007): SJR 0.441 SNIP 0.717
Web of Science (2007): Indexed yes
Scopus rating (2006): SJR 0.393 SNIP 0.645
Web of Science (2006): Indexed yes
Scopus rating (2005): SJR 0.397 SNIP 0.667
Scopus rating (2004): SJR 0.451 SNIP 0.656
Web of Science (2004): Indexed yes
Scopus rating (2003): SJR 0.397 SNIP 0.596
Scopus rating (2002): SJR 0.439 SNIP 0.664
Web of Science (2002): Indexed yes
Scopus rating (2001): SJR 0.396 SNIP 0.619
Web of Science (2001): Indexed yes
Scopus rating (2000): SJR 0.574 SNIP 0.674
Web of Science (2000): Indexed yes
Scopus rating (1999): SJR 0.556 SNIP 0.647
Original language: English
DOIs:
10.1007/s10967-007-0119-z
URLs:
http://www.risoe.dk/rispubl/art/2007_244.pdf

Bibliographical note
This article may be downloaded for personal use only. Any other use requires prior permission of the author and the
publisher
Source: orbit
Source-ID: 216693
Research output: Research - peer-review › Journal article – Annual report year: 2007

Generic handbook for assisting in the management of contaminated inhabited areas in Europe following a radiological
emergency: Part 1-4

General information
State: Published
Organisations: Radioecology and Tracer Studies, Radiation Research Division, Risø National Laboratory for Sustainable
Energy
Contributors: Brown, J., Mortimer, K., Andersson, K. G., Duranova, T., Mrskova, A., Hänninen, R., Ikkäheimonen, T.,
Kirchner, G., Bertsch, V., Fallay, F., Reales, N.
Number of pages: 483
Publication date: 2007

Publication information
Place of publication: Didcot
Publisher: Health Protection Agency
Original language: English
(EURANOS(CAT1)-TN(07)-02).
Source: orbit
Source-ID: 215921
Research output: Research - peer-review › Book – Annual report year: 2007
Deposition of contaminant aerosol on human skin

Over recent years, it has been established that deposition of various types of pollutant aerosols (e.g., radioactive) on human skin can have serious deleterious effects on health. However, only few investigations in the past have been devoted to measurement of deposition velocities on skin of particles of the potentially problematic sizes. An experimental programme has shown the deposition velocities on skin of particles in the ca. 0.5-5 μm AMAD range to be high and generally associated with great variations. A series of investigations have been made to identify some of the factors that lead to this variation. Part of the variation was found to be caused by differences between individuals, whereas another part was found to be related to environmental factors. The identification of major influences on skin contaminant deposition is important in estimating health effects as well as in identifying means for their reduction. (c) 2006 Elsevier Ltd. All rights reserved.
Original language: English
Keywords: nuclear accident, contaminant aerosol, decontamination, skin pollution, dermal exposure, deposition velocity
DOIs:
Source: orbit
Source-ID: 308968
Research output: Research - peer-review › Conference article – Annual report year: 2006

EcoDoses - Improving radiological assessment of doses to man from terrestrial ecosystems. A status report for the NKS-B project 2005

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy, Radiation Research Division
Estimation of doses and remediation effect in a dry-contaminated inhabited area

General information
State: Published
Organisations: Radioecology and Tracer Studies, Radiation Research Division, Risø National Laboratory for Sustainable Energy
Contributors: Andersson, K. G.
Publication date: 2006
Peer-reviewed: No
Event: Abstract from 6. IAEA EMRAS meeting on urban remediation, Vienna (AT), 19-23 Jun,
Source: orbit
Source-ID: 309186
Research output: Research › Report – Annual report year: 2006

Estimation of doses received in a dry-contaminated residential area in the Bryansk region, Russia, since the Chernobyl accident

General information
State: Published
Organisations: Radioecology and Tracer Studies, Radiation Research Division, Risø National Laboratory for Sustainable Energy
Contributors: Andersson, K. G., Roed, J.
Pages: 228-240
Publication date: 2006
Peer-reviewed: Yes

Publication information
Journal: Journal of Environmental Radioactivity
Volume: 85
ISSN (Print): 0265-931X
Ratings:
BFI (2018): BFI-level 1
Web of Science (2018): Indexed yes
BFI (2017): BFI-level 1
Scopus rating (2017): CiteScore 2.26 SJR 0.989 SNIP 1.377
Web of Science (2017): Impact factor 2.263
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 2.39 SJR 0.956 SNIP 1.488
Web of Science (2016): Impact factor 2.31
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): CiteScore 2.62 SJR 1.147 SNIP 1.555
Web of Science (2015): Impact factor 2.047
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): CiteScore 2.54 SJR 1.061 SNIP 1.72
Kontaminering og modtiltag i beboede områder

General information
State: Published
Organisations: Radioecology and Tracer Studies, Radiation Research Division, Risø National Laboratory for Sustainable Energy

Research output: Research - peer-review › Journal article – Annual report year: 2006

Web of Science (2014): Impact factor 2.483
BFI (2013): BFI-level 1
Scopus rating (2013): CiteScore 2.97 SJR 1.613 SNIP 2.059
Web of Science (2013): Impact factor 3.571
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): CiteScore 1.95 SJR 1.082 SNIP 1.71
Web of Science (2012): Impact factor 2.119
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): CiteScore 1.61 SJR 1.106 SNIP 1.638
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 1
Scopus rating (2010): SJR 0.913 SNIP 1.266
Web of Science (2010): Impact factor 1.466
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 1
Scopus rating (2009): SJR 0.956 SNIP 1.549
Web of Science (2009): Indexed yes
BFI (2008): BFI-level 1
Scopus rating (2008): SJR 0.752 SNIP 1.433
Web of Science (2008): Indexed yes
Scopus rating (2007): SJR 0.951 SNIP 1.257
Web of Science (2007): Indexed yes
Scopus rating (2006): SJR 0.799 SNIP 1.305
Web of Science (2006): Indexed yes
Scopus rating (2005): SJR 0.895 SNIP 1.403
Web of Science (2005): Indexed yes
Scopus rating (2004): SJR 0.753 SNIP 1.681
Web of Science (2004): Indexed yes
Scopus rating (2003): SJR 0.578 SNIP 0.916
Web of Science (2003): Indexed yes
Scopus rating (2002): SJR 0.595 SNIP 1.042
Web of Science (2002): Indexed yes
Scopus rating (2001): SJR 0.622 SNIP 1.101
Web of Science (2001): Indexed yes
Scopus rating (2000): SJR 1.08 SNIP 1.036
Web of Science (2000): Indexed yes
Scopus rating (1999): SJR 1.169 SNIP 1.216

Original language: English
DOIs:
10.1016/j.jenvrad.2004.08.019
Source: orbit
Source-ID: 308970

Kontaminering og modtiltag i beboede områder
Long-term stability of decontamination effect in recreational areas near the town Novozybkov, Bryansk region, Russia

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Contributors: Ramzaev, V., Andersson, K. G., Barkovsky, A., Fogh, C., Mishine, A., Roed, J.
Pages: 280-298
Publication date: 2006
Peer-reviewed: Yes

Publication information
Journal: Journal of Environmental Radioactivity
Volume: 85
ISSN (Print): 0265-931X
Ratings:
BFI (2018): BFI-level 1
Web of Science (2018): Indexed yes
BFI (2017): BFI-level 1
Scopus rating (2017): CiteScore 2.26 SJR 0.989 SNIP 1.377
Web of Science (2017): Impact factor 2.263
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 2.39 SJR 0.956 SNIP 1.488
Web of Science (2016): Impact factor 2.31
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): CiteScore 2.62 SJR 1.147 SNIP 1.555
Web of Science (2015): Impact factor 2.047
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): CiteScore 2.54 SJR 1.061 SNIP 1.72
Web of Science (2014): Impact factor 2.483
BFI (2013): BFI-level 1
Scopus rating (2013): CiteScore 2.97 SJR 1.613 SNIP 2.059
Web of Science (2013): Impact factor 3.571
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): CiteScore 1.95 SJR 1.082 SNIP 1.71
Web of Science (2012): Impact factor 2.119
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): CiteScore 1.61 SJR 1.106 SNIP 1.638
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 1
Scopus rating (2010): SJR 0.913 SNIP 1.266
Measurement of contaminant removal from skin using a portable fluorescence scanning system

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Contributors: Hession, H., Byrne, M., Cleary, S., Andersson, K. G., Roed, J.
Pages: 196-204
Publication date: 2006
Peer-reviewed: Yes

Publication information
Journal: Journal of Environmental Radioactivity
Volume: 85
ISSN (Print): 0265-931X
Ratings:
BFI (2018): BFI-level 1
Web of Science (2018): Indexed yes
BFI (2017): BFI-level 1
Scopus rating (2017): CiteScore 2.26 SJR 0.989 SNIP 1.377
Web of Science (2017): Impact factor SJR 2.263
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 2.39 SJR 0.956 SNIP 1.488
Web of Science (2016): Impact factor 2.31
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): CiteScore 2.62 SJR 1.147 SNIP 1.555
Web of Science (2015): Impact factor 2.047
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): CiteScore 2.54 SJR 1.061 SNIP 1.72
Web of Science (2014): Impact factor 2.483
BFI (2013): BFI-level 1
Scopus rating (2013): CiteScore 2.97 SJR 1.613 SNIP 2.059
Web of Science (2013): Impact factor 3.571
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): CiteScore 1.95 SJR 1.082 SNIP 1.71
Web of Science (2012): Impact factor 2.119
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): CiteScore 1.61 SJR 1.106 SNIP 1.638
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 1
Scopus rating (2010): SJR 0.913 SNIP 1.266
Web of Science (2010): Impact factor 1.466
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 1
Scopus rating (2009): SJR 0.956 SNIP 1.549
Web of Science (2009): Indexed yes
BFI (2008): BFI-level 1
Scopus rating (2008): SJR 0.752 SNIP 1.433
Web of Science (2008): Indexed yes
Scopus rating (2007): SJR 0.951 SNIP 1.257
Web of Science (2007): Indexed yes
Scopus rating (2006): SJR 0.799 SNIP 1.305
Web of Science (2006): Indexed yes
Scopus rating (2005): SJR 0.895 SNIP 1.403
Web of Science (2005): Indexed yes
Scopus rating (2004): SJR 0.753 SNIP 1.681
Web of Science (2004): Indexed yes
Scopus rating (2003): SJR 0.578 SNIP 0.916
Web of Science (2003): Indexed yes
Scopus rating (2002): SJR 0.595 SNIP 1.042
Web of Science (2002): Indexed yes
Scopus rating (2001): SJR 0.622 SNIP 1.101
Web of Science (2001): Indexed yes
Scopus rating (2000): SJR 1.08 SNIP 1.036
Web of Science (2000): Indexed yes
Scopus rating (1999): SJR 1.169 SNIP 1.216
Original language: English
DOIs:
10.1016/j.jenvrad.2004.07.008
New developments to support decision-making in contaminated inhabited areas following incidents involving a release of radioactivity to the environment (invited key-note)

General information
State: Published
Organisations: Radioecology and Tracer Studies, Radiation Research Division, Risø National Laboratory for Sustainable Energy
Number of pages: 66
Publication date: 2006

Host publication information
Title of host publication: Conference guide and book of abstracts
Place of publication: Melbourne
Publisher: Australian Radiation Protection and Nuclear Safety Agency
Source: orbit
Source-ID: 309773
Research output: Research › Conference abstract in proceedings – Annual report year: 2006

Placing the contamination under the root uptake zone

General information
State: Published
Organisations: Radioecology and Tracer Studies, Radiation Research Division, Risø National Laboratory for Sustainable Energy
Contributors: Andersson, K. G.
Publication date: 2006
Peer-reviewed: No
Source: orbit
Source-ID: 309777
Research output: Research › Conference abstract for conference – Annual report year: 2006

Radioactive contamination in urban areas

General information
State: Published
Organisations: Radioecology and Tracer Studies, Radiation Research Division, Risø National Laboratory for Sustainable Energy
Contributors: Andersson, K. G.
Pages: 151-153
Publication date: 2006
Peer-reviewed: Yes

Publication information
Journal: Journal of Environmental Radioactivity
Volume: 85
ISSN (Print): 0265-931X
Ratings:
BFI (2018): BFI-level 1
Web of Science (2018): Indexed yes
BFI (2017): BFI-level 1
Scopus rating (2017): CiteScore 2.26 SJR 0.989 SNIP 1.377
Web of Science (2017): Impact factor 2.263
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Reduction of external dose in a wet-contaminated housing area in the Bryansk region, Russia

An investigation of the feasibility of reducing the external dose rate in a recreational housing area located between the settlements of Guta and Muravinka, Bryansk Region, Russia, which had been contaminated by the Chernobyl accident more than a decade earlier was made. Removal of contaminated topsoil was carried out over an area of about 2000 m², optimising the thickness of the removed layer according to an assessment of the vertical contaminant distribution. A layer of clean sand was applied to shield against radiation from residual contamination in the ground. Careful monitoring of dose rates in reference positions showed that this could reduce the dose rate outdoors by about a factor of 6. The replacement of a roof was found to reduce the dose rate considerably inside the house. A cost analysis of the operation is presented.

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Contributors: Roed, J., Andersson, K. G., Barkovsky, A., Fogh, C., Mishine, A., Ponamarjov, A., Ramzaev, V.
Pages: 265-279
Publication date: 2006
Peer-reviewed: Yes

Publication information
Journal: Journal of Environmental Radioactivity
Volume: 85
Issue number: 2-3
ISSN (Print): 0265-931X
Ratings:
BFI (2018): BFI-level 1
Web of Science (2018): Indexed yes
BFI (2017): BFI-level 1
Scopus rating (2017): CiteScore 2.26 SJR 0.989 SNIP 1.377
Web of Science (2017): Impact factor 2.263
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 2.39 SJR 0.956 SNIP 1.488
Web of Science (2016): Impact factor 2.31
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): CiteScore 2.62 SJR 1.147 SNIP 1.555
Web of Science (2015): Impact factor 2.047
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): CiteScore 2.54 SJR 1.061 SNIP 1.72
Web of Science (2014): Impact factor 2.483
BFI (2013): BFI-level 1
Scopus rating (2013): CiteScore 2.97 SJR 1.613 SNIP 2.059
Web of Science (2013): Impact factor 3.571
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): CiteScore 1.95 SJR 1.082 SNIP 1.71
Web of Science (2012): Impact factor 2.119
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): CiteScore 1.61 SJR 1.106 SNIP 1.638
Requirements of future models for inhabited areas

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Contributors: Brown, J., Andersson, K. G., Jones, J., Meckbach, R., Müller, H., Roed, J.
Pages: 344-360
Publication date: 2006
Peer-reviewed: Yes

Publication information
Journal: Journal of Environmental Radioactivity
Volume: 85
ISSN (Print): 0265-931X
Ratings:
BFI (2018): BFI-level 1
Web of Science (2018): Indexed yes
BFI (2017): BFI-level 1
Scopus rating (2017): CiteScore 2.26 SJR 0.989 SNIP 1.377
Web of Science (2017): Impact factor 2.263
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 2.39 SJR 0.956 SNIP 1.488
Web of Science (2016): Impact factor 2.31
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): CiteScore 2.62 SJR 1.147 SNIP 1.555
Web of Science (2015): Impact factor 2.047
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): CiteScore 2.54 SJR 1.061 SNIP 1.72
Web of Science (2014): Impact factor 2.483
BFI (2013): BFI-level 1
Scopus rating (2013): CiteScore 2.97 SJR 1.613 SNIP 2.059
Web of Science (2013): Impact factor 3.571
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): CiteScore 1.95 SJR 1.082 SNIP 1.71
Web of Science (2012): Impact factor 2.119
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): CiteScore 1.61 SJR 1.106 SNIP 1.638
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 1
Scopus rating (2010): SJR 0.913 SNIP 1.266
Web of Science (2010): Impact factor 1.466
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 1
Scopus rating (2009): SJR 0.956 SNIP 1.549
Web of Science (2009): Indexed yes
BFI (2008): BFI-level 1
Scopus rating (2008): SJR 0.752 SNIP 1.433
Web of Science (2008): Indexed yes
Scopus rating (2007): SJR 0.951 SNIP 1.257
Web of Science (2007): Indexed yes
Scopus rating (2006): SJR 0.799 SNIP 1.305
Web of Science (2006): Indexed yes
Scopus rating (2005): SJR 0.895 SNIP 1.403
Web of Science (2005): Indexed yes
Scopus rating (2004): SJR 0.753 SNIP 1.681
Web of Science (2004): Indexed yes
Scopus rating (2003): SJR 0.578 SNIP 0.916
Web of Science (2003): Indexed yes
Scopus rating (2002): SJR 0.595 SNIP 1.042
Web of Science (2002): Indexed yes
Scopus rating (2001): SJR 0.622 SNIP 1.101
Web of Science (2001): Indexed yes
Scopus rating (2000): SJR 1.08 SNIP 1.036
Adaptation of ECOSYS for Nordic food chain modelling

General information
State: Published
Organisations: Radiation Research Division, Risø National Laboratory for Sustainable Energy
Contributors: Andersson, K. G., Nielsen, S.
Publication date: 2005
Peer-reviewed: No
Event: Abstract from NKS seminar on radioecology and measurement techniques, Tartu (EE), 24-25 Oct.
Source: orbit
Source-ID: 308731
Research output: Research › Conference abstract for conference – Annual report year: 2005

Countermeasures and parameters

General information
State: Published
Organisations: Radioecology and Tracer Studies, Radiation Research Division, Risø National Laboratory for Sustainable Energy
Contributors: Andersson, K. G.
Publication date: 2005
Peer-reviewed: No
Event: Abstract from ARGOS FDM seminar, Brændby, Denmark.
Source: orbit
Source-ID: 308727
Research output: Research › Conference abstract for conference – Annual report year: 2005

Countermeasures for the management of inhabited areas contaminated after a radiological incident

General information
State: Published
Organisations: Radioecology and Tracer Studies, Radiation Research Division, Risø National Laboratory for Sustainable Energy
Contributors: Brown, J., Andersson, K. G., Mortimer, K.
Publication date: 2005

Publication information
Place of publication: Didcot
Publisher: Health Protection Agency, Radiation Protection Division
Original language: English
(RPD-EA-5-2005)
Source: orbit
Source-ID: 308762
Research output: Research - peer-review › Book – Annual report year: 2005

Countermeasure strategies for agricultural systems

General information
State: Published
Organisations: Radiation Research Division, Risø National Laboratory for Sustainable Energy
Contributors: Andersson, K. G.
Publication date: 2005
Peer-reviewed: No
Dose contributions from malicious radionuclide dispersion in an urban area

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Contributors: Andersson, K. G.
Pages: 59-62
Publication date: 2005

Host publication information
Title of host publication: Proceedings
Place of publication: Stockholm
Publisher: Statens strålskyddsinstitut
URLs:
Source: orbit
Source-ID: 308407
Research output: Research › Article in proceedings – Annual report year: 2005

Nordic decision support handbook for contaminated inhabited areas

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Contributors: Andersson, K. G., Ammann, M., Backe, S., Rosén, K.
Pages: 83-86
Publication date: 2005

Host publication information
Title of host publication: Proceedings
Place of publication: Stockholm
Publisher: Statens strålskyddsinstitut
URLs:
Source: orbit
Source-ID: 308410
Research output: Research › Article in proceedings – Annual report year: 2005

On the fate of contaminant particles formed during decommissioning

General information
State: Published
Organisations: Radiation Research Division, Risø National Laboratory for Sustainable Energy
Contributors: Andersson, K. G., Byrne, M.
Publication date: 2005
Peer-reviewed: No
Event: Abstract from NKS decommissioning seminar, Risø (DK), 13-15 Sep, .
Source: orbit
Source-ID: 308730
Research output: Research › Conference abstract for conference – Annual report year: 2005

Relative importance of dose pathways in a 'dirty bomb' scenario

General information
State: Published
Organisations: Radiation Research Division, Risø National Laboratory for Sustainable Energy
The ECOSYS model and parameters

General information
State: Published
Organisations: Radiation Research Division, Risø National Laboratory for Sustainable Energy
Contributors: Andersson, K. G.
Publication date: 2005
Peer-reviewed: No
Event: Abstract from ARGOS FDM seminar, Brøndby, Denmark.
Source: orbit
Source-ID: 308726
Research output: Research › Conference abstract for conference – Annual report year: 2005

The STRATEGY project: Decision tools to aid sustainable restoration and long-term management of contaminated agricultural ecosystems

General information
State: Published
Organisations: Radiation Research Division, Risø National Laboratory for Sustainable Energy
Pages: 275-295
Publication date: 2005
Peer-reviewed: Yes

Publication information
Journal: Journal of Environmental Radioactivity
Volume: 83
ISSN (Print): 0265-931X
Ratings:
BFI (2018): BFI-level 1
Web of Science (2018): Indexed yes
BFI (2017): BFI-level 1
Scopus rating (2017): CiteScore 2.26 SJR 0.989 SNIP 1.377
Web of Science (2017): Impact factor 2.263
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 2.39 SJR 0.956 SNIP 1.488
Web of Science (2016): Impact factor 2.31
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): CiteScore 2.62 SJR 1.147 SNIP 1.555
Web of Science (2015): Impact factor 2.047
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): CiteScore 2.54 SJR 1.061 SNIP 1.72
Web of Science (2014): Impact factor 2.483
BFI (2013): BFI-level 1
Scopus rating (2013): CiteScore 2.97 SJR 1.613 SNIP 2.059
Web of Science (2013): Impact factor 3.571
ISI indexed (2013): ISI indexed yes
A critical evaluation of the STRATEGY project

The STRATEGY project (sustainable restoration and long-term management of contaminated rural, urban and industrial ecosystems; www.strategy-ec.org.uk) addressed the need for a holistic decision framework for the selection of optimal remediation strategies for long-term sustainable management of contaminated areas in Western Europe. The project considered both technical and social aspects of implementing restoration strategies for urban and rural environments. The importance of considering socially relevant objectives in addition to the dose reduction was emphasised. A critical evaluation was carried out on 101 selected countermeasures, (including rural waste disposal options), a model was developed to aid optimising countermeasure strategies and a method of carrying out participatory decision-making suggested. The outputs of the project are described and critically evaluated.

General information
Airborne contamination in the indoor environment and its implications for dose

General information
State: Published
Organisations: Radiation Research Division, Risø National Laboratory for Sustainable Energy
Number of pages: 98
Publication date: 2004

Publication information
ISBN (Print): 87-550-3317-2
Original language: English
(Denmark. Forskningscenter Risoe. Risoe-R; No. 1462(EN)).
Keywords: Risø-R-1462, Risø-R-1462(EN)
Electronic versions:
ris_r_1462.pdf
Source: orbit
Source-ID: 306848
Research output: Research › Report – Annual report year: 2004

Indoor contamination including contamination of inhabitants, and data assimilation in the urban area

General information
State: Published
Organisations: Radiation Research Division, Risø National Laboratory for Sustainable Energy
Contributors: Andersson, K. G.
Publication date: 2004
Peer-reviewed: No
Event: Abstract from Seminar: Urban dispersion in ARGOS, Copenhagen, Denmark.
Source: orbit
Source-ID: 307357
Research output: Research › Conference abstract for conference – Annual report year: 2004

Observations of aerosol flux divergence during dry deposition to forest canopies

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy, Radiation Research Division, Wind Energy Division
Contributors: Pryor, S., Bartheimie, R., Serensen, L., Andersson, K. G., Prip, H., Larsen, S. E.
Pages: 91-92
Publication date: 2004
Study on dry deposition of elemental iodine on the skin, hair and clothes from air by neutron activation analysis

General information
State: Published
Organisations: Radiation Research Division, Risø National Laboratory for Sustainable Energy
Contributors: Hou, X., Andersson, K. G., Roed, J.
Number of pages: 60
Publication date: 2004

Airborne contamination of human skin

General information
State: Published
Organisations: Radiation Research Division, Risø National Laboratory for Sustainable Energy
Contributors: Andersson, K. G., Roed, J., Byrne, M., Hession, H., Clark, P.
Pages: 33-34
Publication date: 2003

Chemical fractionation of iodine-129 and cesium-137 in Chernobyl contaminated soil and Irish Sea sediment

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Pages: 410-417
Publication date: 2003
Comparison of skim-and-burial ploughing and scraping for restoration of contaminated land

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy, Radiation Research Division
Contributors: Roed, J., Andersson, K. G.
Pages: 230-231
Publication date: 2003

Host publication information
Title of host publication: Conference proceedings. Vol. 1, pt. 2
Place of publication: Uppsala
Publisher: SLU
Editors: Gobran, G., Lepp, N.
ISBN (Print): 91-576-6582-6
URLs:
http://www-conference.slu.se/7thICOBTE/documentation/Volume%201-II.pdf
Source: orbit
Source-ID: 306471
Research output: Research › Article in proceedings – Annual report year: 2003

Countermeasures for remediation of contaminated inhabited areas

General information
State: Published
Organisations: Radiation Research Division, Risø National Laboratory for Sustainable Energy
Contributors: Andersson, K. G., Roed, J.
Publication date: 2003
Peer-reviewed: No
Event: Poster session presented at NKS Conference on Radioactive Contamination in Urban Areas, Risø, Denmark.
Source: orbit
Source-ID: 306511
Research output: Research › Poster – Annual report year: 2003

Deposition of contaminant aerosol on human skin

General information
State: Published
Organisations: Radiation Research Division, Risø National Laboratory for Sustainable Energy
Contributors: Andersson, K. G., Roed, J., Byrne, M., Hession, H.
Publication date: 2003
Peer-reviewed: No
Event: Abstract from NKS Conference on Radioactive Contamination in Urban Areas, Risø, Denmark.
Source: orbit
Source-ID: 306503
Research output: Research › Conference abstract for conference – Annual report year: 2003

Doses received in a dry-contaminated living area in the Bryansk Region, Russia, since the Chernobyl accident (poster)

General information
State: Published
Organisations: Radiation Research Division, Risø National Laboratory for Sustainable Energy
Contributors: Andersson, K. G., Roed, J.
Publication date: 2003
Peer-reviewed: No
Event: Poster session presented at NKS Conference on Radioactive Contamination in Urban Areas, Risø, Denmark.
Source: orbit
Source-ID: 306513
Research output: Research › Poster – Annual report year: 2003
Guidelines for planning interventions against external exposure in industrial area after a nuclear accident. Part I: A holistic approach of countermeasure application

General information
State: Published
Organisations: Radiation Research Division, Risø National Laboratory for Sustainable Energy
Contributors: Eged, K., Kis, Z., Voigt, G., Andersson, K. G., Roed, J., Varga, K.
Number of pages: 67
Publication date: 2003

Publication information
Original language: English
(GSF-Bericht 01/03).
Source: orbit
Source-ID: 306470
Research output: Research › Report – Annual report year: 2003

Iodine-129 and Caesium-137 in Chernobyl contaminated soil and their chemical fractionation
Soil samples from areas in Belarus, Russia and Sweden contaminated by the Chernobyl accident were analysed for I-129 by radiochemical neutron activation analysis, as well as for Cs-137 by gamma-spectrometry. The atomic ratio of I-129/(CS)-C-137 in the upper layer of the examined soil cores ranged from 0.10 to 0.30, with an average of 0.18, and no correlation between I-129/Cs-137 ratio and the distance from Chernobyl reactor to sampling location was observed. It seems feasible to use the I-129/Cs-137 ratio to reconstruct the deposition pattern of I-131 in these areas. The association of I-129 and (CS)-C-137 in the Chernobyl soil and Irish Sea sediment was investigated by a sequential extraction method. Similar speciation of I-129 in the Chernobyl soil and Irish Sea sediment was found. Approximately 70% of I-129 is bound to oxides and organic matter, and 10-20% is in the readily available phase, while most of the (CS)-C-137 (73%) in Chernobyl soil remains in the extraction residue. (C) 2002 Elsevier Science B.V. All rights reserved.

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Pages: 97-109
Publication date: 2003
Peer-reviewed: Yes

Publication information
Journal: Science of the Total Environment
Volume: 308
Issue number: 1-3
ISSN (Print): 0048-9697
Ratings:
BFI (2018): BFI-level 2
Web of Science (2018): Indexed yes
BFI (2017): BFI-level 2
Scopus rating (2017): CiteScore 4.98 SJR 1.546 SNIP 1.65
Web of Science (2017): Impact factor 4.61
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 5.09 SJR 1.652 SNIP 1.856
Web of Science (2016): Impact factor 4.9
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): CiteScore 4.33 SJR 1.653 SNIP 1.648
Web of Science (2015): Impact factor 3.976
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): CiteScore 4.2 SJR 1.635 SNIP 1.843
Web of Science (2014): Impact factor 4.099
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 2
Long-term stability of decontamination effect in recreational areas of the town Novozybkov, Bryansk Region, Russia

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy, Radiation Research Division
Contributors: Ramzaev, V., Barkovsky, A., Mishine, A., Roed, J., Andersson, K. G., Fogh, C.
Publication date: 2003
Peer-reviewed: No
Measurement of contaminant clearance from skin using a portable fluorescence scanning system

General information
State: Published
Organisations: Radiation Research Division, Risø National Laboratory for Sustainable Energy
Contributors: Byrne, M., Hession, H., Cleary, S., Andersson, K. G., Roed, J.
Publication date: 2003
Peer-reviewed: No
Event: Abstract from NKS Conference on Radioactive Contamination in Urban Areas, Risø, Denmark.
Source: orbit
Source-ID: 306505
Research output: Research › Conference abstract for conference – Annual report year: 2003

Physical countermeasures to sustain acceptable living and working conditions in radioactively contaminated residential areas

General information
State: Published
Organisations: Radiation Research Division, Risø National Laboratory for Sustainable Energy
Number of pages: 143
Publication date: 2003
Publication information
ISBN (Print): 87-550-3190-0
Original language: English
(Denmark. Forskningscenter Risoe. Risoe-R; No. 1396(EN)).
Keywords: Risø-R-1396, Risø-R-1396(EN)
Electronic versions:
ris_r_1396.pdf
Source: orbit
Source-ID: 305280
Research output: Research › Report – Annual report year: 2003

Reduction of external dose in a wet-contaminated housing area in the Bryansk Region, Russia

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy, Radiation Research Division
Contributors: Roed, J., Andersson, K. G., Barkovsky, A., Fogh, C., Mishine, A., Ponamarjov, A., Ramzaev, V.
Publication date: 2003
Peer-reviewed: No
Event: Abstract from NKS Conference on Radioactive Contamination in Urban Areas, Risø, Denmark.
Source: orbit
Source-ID: 306507
Research output: Research › Conference abstract for conference – Annual report year: 2003

Requirements of future models for inhabited areas (invited presentation)

General information
State: Published
Organisations: Radiation Research Division, Risø National Laboratory for Sustainable Energy
Contributors: Brown, J., Andersson, K. G., Jones, J., Meckbach, R., Müller, H., Roed, J.
Publication date: 2003
Peer-reviewed: No
Event: Abstract from NKS Conference on Radioactive Contamination in Urban Areas, Risø, Denmark.
Source: orbit
Agricultural countermeasures in the Nordic countries after a nuclear accident

General information
State: Published
Organisations: Radiation Research Division, Risø National Laboratory for Sustainable Energy
Number of pages: 32
Publication date: 2002

Publication information
ISBN (Print): 87-7893-104-5
Original language: English
Source: orbit
Source-ID: 304178
Research output: Research › Report – Annual report year: 2002

Chemical fractionation of iodine-129 and cesium-137 in Chernobyl contaminated soil and Irish Sea sediment

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Number of pages: 84
Publication date: 2002

Host publication information
Title of host publication: Abstracts
Place of publication: Maidstone
Publisher: Royal Society of Chemistry. Analytical Division
Source: orbit
Source-ID: 304622
Research output: Research › Conference abstract in proceedings – Annual report year: 2002

Datasheet based countermeasure evaluation for radioactively contaminated Nordic food-producing areas

General information
State: Published
Organisations: Radiation Research Division, Risø National Laboratory for Sustainable Energy
Pages: 107-110
Publication date: 2002

Host publication information
Title of host publication: Proceedings
Volume: NKS-70
Place of publication: Roskilde
Publisher: NKS
Editor: Ilus, E.
ISBN (Print): 87-7893-126-6
Source: orbit
Source-ID: 304932
Research output: Research › Article in proceedings – Annual report year: 2002

Iodine-129 and Cesium -137 in Chernobyl contaminated soil

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Mobility of $^{137}$Cs in undisturbed soil: Analysis methods and techniques

General information
State: Published
Organisations: Radiation Research Division, Risø National Laboratory for Sustainable Energy
Contributors: Andersson, K. G., Fogh, C., Roed, J.
Pages: 231-236
Publication date: 2002
Peer-reviewed: Yes

Publication information
Journal: Radioprotection
Volume: 37
Issue number: C1
ISSN (Print): 0033-8451
Ratings:
BFI (2018): BFI-level 1
Web of Science (2018): Indexed yes
BFI (2017): BFI-level 1
Scopus rating (2017): CiteScore 0.22 SJR 0.177 SNIP 0.217
Web of Science (2017): Impact factor 0.225
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 0.34 SJR 0.237 SNIP 0.456
Web of Science (2016): Impact factor 0.388
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): CiteScore 0.33 SJR 0.252 SNIP 0.388
Web of Science (2015): Impact factor 0.508
BFI (2014): BFI-level 1
Scopus rating (2014): CiteScore 0.3 SJR 0.231 SNIP 0.318
Web of Science (2014): Impact factor 0.54
BFI (2013): BFI-level 1
Scopus rating (2013): CiteScore 0.24 SJR 0.264 SNIP 0.325
Web of Science (2013): Impact factor 0.596
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): CiteScore 0.13 SJR 0.238 SNIP 0.232
Web of Science (2012): Impact factor 0.444
ISI indexed (2012): ISI indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): CiteScore 0.33 SJR 0.26 SNIP 0.588
Web of Science (2011): Impact factor 1
ISI indexed (2011): ISI indexed no
Radiation dose implications of airborne contaminant deposition to humans

General information
State: Published
Organisations: Radiation Research Division, Risø National Laboratory for Sustainable Energy
Contributors: Andersson, K. G., Fogh, C., Byrne, M., Roed, J., Goddard, A., Hotchkiss, S.
Pages: 226-232
Publication date: 2002
Peer-reviewed: Yes

Publication information
Journal: Health Physics
Volume: 82
ISSN (Print): 0017-9078
Ratings:
BFI (2018): BFI-level 1
Web of Science (2018): Indexed yes
BFI (2017): BFI-level 1
Scopus rating (2017): CiteScore 0.82 SJR 0.528 SNIP 0.664
Web of Science (2017): Impact factor 0.993
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 0.95 SJR 0.555 SNIP 0.894
Web of Science (2016): Impact factor 1.276
BFI (2015): BFI-level 1
Scopus rating (2015): CiteScore 1.09 SJR 0.7 SNIP 0.986
Web of Science (2015): Impact factor 1.193
BFI (2014): BFI-level 1
Scopus rating (2014): CiteScore 0.89 SJR 0.501 SNIP 0.958
Web of Science (2014): Impact factor 1.271
BFI (2013): BFI-level 1
Sustainable restoration and long-term management of contaminated rural, urban and industrial ecosystems

General information
State: Published
Organisations: Radiation Research Division, Risø National Laboratory for Sustainable Energy
Pages: 1067-1072
Publication date: 2002
Peer-reviewed: Yes

Publication information
Journal: Radioprotection
Volume: 37
Issue number: C1
ISSN (Print): 0033-8451
Ratings:
BFI (2018): BFI-level 1
Web of Science (2018): Indexed yes
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Original language: English

DOIs:
10.1051/radiopro/2002126
Source: orbit
Source-ID: 304930
Research output: Research - peer-review > Conference article – Annual report year: 2002
Danish national contribution

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Contributors: Andersson, K. G.
Pages: 17-30
Publication date: 2001

Host publication information
Title of host publication: HUGINN. A late-phase nuclear emergency exercise
Volume: NKS-23
Editor: Lauritzen, B.
ISBN (Print): 87-7893-073-1
Source: orbit
Dynamic behaviour of Cs-137 contamination in trees of the Briansk region, Russia

Seven trees were felled in the Briansk region in 1997. The trees were sectioned for sampling, both at different heights and according to year rings, and samples were analysed for content of Cs-137. In general, the specific activity of Cs-137 was much higher in the fresh parts of the tree (needles, leaves and twigs) than in the core wood. The year ring study showed that Cs-137 had penetrated deeply into the trunk, and no peak was detectable in the year ring corresponding to the Chernobyl accident in 1986. The specific activity in the trunk wood had a maximum at the height corresponding to the growth years at approximately 1986. Neutron activation analysis was used to analyse for stable Cs. The results showed that the relationship between concentrations of Cs-137 and stable caesium is much higher in the newer parts of growing trees than in the older parts. Together with a tendency of inward migration this leads to a preliminary conclusion that the Cs-137 activity will continue to accumulate in the core wood. (C) 2001 Elsevier Science B.V. All rights reserved.
Guide on decontamination of rural settlements in the late period after radioactive contamination with long-lived radionuclides

General information
State: Published
Organisations: Radiation Research Division, Risø National Laboratory for Sustainable Energy
Number of pages: 84
Publication date: 2001

Publication information
Place of publication: Vienna
Publisher: IAEA, Division of Radiation and Waste Safety
Original language: English
Source: orbit
Source-ID: 303358
Research output: Research › Report – Annual report year: 2001
A guide to countermeasures for implementation in the event of a nuclear accident affecting Nordic food-producing areas

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Number of pages: 76
Publication date: 2000

Publication information
ISBN (Print): 87-7893-066-9
Original language: English
(NKS-16).
Source: orbit
Source-ID: 301356
Research output: Research › Report – Annual report year: 2000

Development of a strategy for decontamination of an urban area

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy, Radiation Research Division
Contributors: Roed, J., Andersson, K. G.
Pages: 92-98
Publication date: 2000

Host publication information
Title of host publication: Restoration of environments affected by residues from radiological accidents: Approaches to decision making
Volume: IAEA-TECDOC-1131
Editor: Oliveira, C. D.
Source: orbit
Source-ID: 301827
Research output: Research › Article in proceedings – Annual report year: 2000

Early measurements in Scandinavia following the Chernobyl accident

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy, Radiation Research Division
Contributors: Roed, J., Andersson, K. G.
Pages: 71-75
Publication date: 2000

Host publication information
Title of host publication: Restoration of environments affected by residues from radiological accidents: Approaches to decision making
Volume: IAEA-TECDOC-1131
Editor: Oliveira, C. D.
Source: orbit
Source-ID: 301826
Research output: Research › Article in proceedings – Annual report year: 2000

In situ performance of the CORAD device measuring contamination levels and penetration ratio of Cs-137

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy, Radiation Research Division
Contributors: Fogh, C., Andersson, K. G., Roed, J.
Pages: 408-414
Publication date: 2000
Peer-reviewed: Yes

Publication information
Modelling of skin exposure from distributed sources
A simple model of indoor air pollution concentrations was used together with experimental results on deposition velocities to skin to calculate the skin dose from an outdoor plume of contaminants. The primary pathway was considered to be direct deposition to the skin from a homogeneously distributed air source. The model has been used to show that skin deposition was a significant dose contributor for example when compared to inhalation dose. (C) 2000 British Occupational Hygiene Society, Published by Elsevier Science Ltd. All rights reserved.
Power production from radioactively contaminated biomass and forest litter in Belarus - Phase 1b

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy, Radiation Research Division
Number of pages: 93
Publication date: 2000

Decontamination in a Russian settlement
Decontamination was carried out in an area with three houses in Novo Bobovichi, Bryansk region, Russia, in the autumn of 1995. It was demonstrated that significant reductions in the dose rate both indoor (DRF = 0.34) and outdoor (DRF = 0.20) can be achieved when a controlled cleaning is undertaken. This paper describes the decontamination work carried out and the results obtained. The roofs of the houses were swept and cleaned by special roof cleaning equipment. The soil around the houses was removed by hand while carefully monitoring the ground for residual contamination. By monitoring the decline in the dose rate during the different stages of the work the dose reducing effect of each action has been measured.

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy, Radioecology and Tracer Studies, Radiation Research Division
Pages: 421-430
Publication date: Apr 1999
A Nordic preparedness guide for early clean-up in radioactively contaminated residential areas

General information
State: Published
Organisations: Radioecology and Tracer Studies, Radiation Research Division, Risø National Laboratory for Sustainable Energy
Contributors: Andersson, K. G., Roed, J.
Pages: 207-223
Publication date: 1999
Peer-reviewed: Yes

Publication information
Journal: Journal of Environmental Radioactivity
Volume: 46
ISSN (Print): 0265-931X
Ratings:
BFI (2018): BFI-level 1
Web of Science (2018): Indexed yes
BFI (2017): BFI-level 1
Scopus rating (2017): CiteScore 2.26 SJR 0.989 SNIP 1.377
Web of Science (2017): Impact factor 2.263
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 2.39 SJR 0.956 SNIP 1.488
Web of Science (2016): Impact factor 2.31
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): CiteScore 2.62 SJR 1.147 SNIP 1.555
Web of Science (2015): Impact factor 2.047
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): CiteScore 2.54 SJR 1.061 SNIP 1.72
Web of Science (2014): Impact factor 2.483
BFI (2013): BFI-level 1
Scopus rating (2013): CiteScore 2.97 SJR 1.613 SNIP 2.059
Web of Science (2013): Impact factor 3.571
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): CiteScore 1.95 SJR 1.082 SNIP 1.71
Web of Science (2012): Impact factor 2.119
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): CiteScore 1.61 SJR 1.106 SNIP 1.638
ISI indexed (2011): ISI indexed yes
Occupational exposure at a contemplated Belarussian power plant fired with contaminated biomass

To meet the current demand in Belarus for remediation of the vast forest areas that were contaminated by the Chernobyl accident and at the same time establish a much needed energy production, applying contaminated forest biomass as fuel in special power plants is being considered. This paper focuses on the radiation doses that may be received by workers at such a power plant. By Monte Carlo modelling based on a Danish biofuel power plant design it was found that the highest
dose rates within the power plant would be those to people standing near the fly ash silo, bottom ash containers and so-called 'big bags' filled with fly ash waste. Inhalation doses were estimated to be low. External doses received while working at the power plant do not appear to be highly significant compared with the doses from environmental contamination in the area where the power plant is expected to be constructed.

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Contributors: Andersson, K. G., Fogh, C., Roed, J.
Pages: 339-344
Publication date: 1999
Peer-reviewed: No

Publication information
Journal: Radiation Protection Dosimetry
Volume: 83
Issue number: 4
ISSN (Print): 0144-8420
Ratings:
BFI (2018): BFI-level 1
Web of Science (2018): Indexed yes
BFI (2017): BFI-level 1
Scopus rating (2017): CiteScore 0.77 SJR 0.487 SNIP 0.661
Web of Science (2017): Impact factor 0.822
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 0.86 SJR 0.448 SNIP 0.721
Web of Science (2016): Impact factor 0.917
BFI (2015): BFI-level 1
Scopus rating (2015): CiteScore 0.82 SJR 0.468 SNIP 0.824
Web of Science (2015): Impact factor 0.894
BFI (2014): BFI-level 1
Scopus rating (2014): CiteScore 0.89 SJR 0.525 SNIP 0.905
Web of Science (2014): Impact factor 0.913
BFI (2013): BFI-level 1
Scopus rating (2013): CiteScore 0.9 SJR 0.549 SNIP 0.813
Web of Science (2013): Impact factor 0.861
ISI indexed (2013): ISI indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): CiteScore 0.82 SJR 0.563 SNIP 0.805
Web of Science (2012): Impact factor 0.909
ISI indexed (2012): ISI indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): CiteScore 0.96 SJR 0.567 SNIP 1.041
Web of Science (2011): Impact factor 0.822
ISI indexed (2011): ISI indexed yes
BFI (2010): BFI-level 1
Scopus rating (2010): SJR 0.585 SNIP 0.805
Web of Science (2010): Impact factor 0.966
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 1
Scopus rating (2009): SJR 0.504 SNIP 0.764
BFI (2008): BFI-level 1
Scopus rating (2008): SJR 0.611 SNIP 1.032
Web of Science (2008): Indexed yes
Scopus rating (2007): SJR 0.507 SNIP 1.008
Web of Science (2007): Indexed yes
Quantitative measurement of aerosol deposition on skin, hair and clothing for dosimetric assessment. Final report

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Contributors: Fogh, C., Byrne, M., Andersson, K. G., Bell, K., Roed, J., Goddard, A., Vollmair, D., Hotchkiss, S.
Number of pages: 57
Publication date: 1999

Publication information
ISBN (Print): 87-550-2446-7
Original language: English
(Denmark. Forskningscenter Risoe. Risoe-R; No. 1075(EN)).
Keywords: Risø-R-1075, Risø-R-1075(EN)
Electronic versions:
ris_r_1075.pdf
Source: orbit
Source-ID: 300029
Research output: Research › Journal article – Annual report year: 1999

Radiation doses from contaminant aerosol deposition to the human body

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Contributors: Andersson, K. G., Fogh, C., Byrne, M., Roed, J., Goddard, A.
Pages: 177-180
Publication date: 1999

Host publication information
Title of host publication: Proceedings
Place of publication: Roskilde
Publisher: Risø National Laboratory
Editors: Søgaard-Hansen, J., Damkjær, A.
ISBN (Print): 87-550-2817-6
Source: orbit
Source-ID: 300041
Research output: Research › Article in proceedings – Annual report year: 1999
Surface activity distribution measurements and establishment of a dose rate map inside the destroyed Chernobyl reactor

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Number of pages: 41
Publication date: 1999

Publication information
ISBN (Print): 87-550-2444-0
Original language: English
(Denmark. Forskningscenter Risoe. Risoe-R; No. 1074(EN)).
Keywords: Risø-R-1074, Risø-R-1074(EN)
Electronic versions:
ris_r_1074.pdf
Source: orbit
Source-ID: 300287
Research output: Research - peer-review › Journal article – Annual report year: 1999

Triple digging - a simple method for restoration of radioactively contaminated urban soil areas

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Pages: 173-183
Publication date: 1999
Peer-reviewed: Yes

Publication information
Journal: Journal of Environmental Radioactivity
Volume: 45
ISSN (Print): 0265-931X
Ratings:
BFI (2018): BFI-level 1
Web of Science (2018): Indexed yes
BFI (2017): BFI-level 1
Scopus rating (2017): CiteScore 2.26 SJR 0.989 SNIP 1.377
Web of Science (2017): Impact factor 2.263
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 2.39 SJR 0.956 SNIP 1.488
Web of Science (2016): Impact factor 2.31
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): CiteScore 2.62 SJR 1.147 SNIP 1.555
Web of Science (2015): Impact factor 2.047
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): CiteScore 2.54 SJR 1.061 SNIP 1.72
Web of Science (2014): Impact factor 2.483
BFI (2013): BFI-level 1
Scopus rating (2013): CiteScore 2.97 SJR 1.613 SNIP 2.059
Web of Science (2013): Impact factor 3.571
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): CiteScore 1.95 SJR 1.082 SNIP 1.71
Web of Science (2012): Impact factor 2.119
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): CiteScore 1.61 SJR 1.106 SNIP 1.638
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 1
Scopus rating (2010): SJR 0.913 SNIP 1.266
Web of Science (2010): Impact factor 1.466
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 1
Scopus rating (2009): SJR 0.956 SNIP 1.549
Web of Science (2009): Indexed yes
BFI (2008): BFI-level 1
Scopus rating (2008): SJR 0.752 SNIP 1.433
Web of Science (2008): Indexed yes
Scopus rating (2007): SJR 0.951 SNIP 1.257
Web of Science (2007): Indexed yes
Scopus rating (2006): SJR 0.799 SNIP 1.305
Web of Science (2006): Indexed yes
Scopus rating (2005): SJR 0.895 SNIP 1.403
Web of Science (2005): Indexed yes
Scopus rating (2004): SJR 0.753 SNIP 1.681
Web of Science (2004): Indexed yes
Scopus rating (2003): SJR 0.578 SNIP 0.916
Web of Science (2003): Indexed yes
Achievable reduction of doses to the population in Belarus by forest decontamination

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy, Radioecology and Tracer Studies, Radiation Research Division
Contributors: Roed, J., Andersson, K. G.
Publication date: 1998

Host publication information
Title of host publication: Chernobyl Bioenergy Project. Power production from radioactively contaminated biomass and forest litter in Belarus. Final report, phase 1
Place of publication: Fredericia (DK)
Publisher: Elsamprojekt A/S
Source: orbit
Source-ID: 298082
Research output: Research - Book chapter – Annual report year: 1998

Chernobyl Bioenergy Project. Power production from radioactively contaminated biomass and forest litter in Belarus. Final report, phase 1

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Publication date: 1998

Publication information
Place of publication: Fredericia (DK)
Publisher: Elsamprojekt A/S
Original language: English
Source: orbit
Source-ID: 298080
Research output: Research - Book – Annual report year: 1998

Estimation of doses to the population from stack releases from a Belarussian power plant fired with contaminated biomass

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Contributors: Roed, J., Andersson, K. G.
Publication date: 1998

Host publication information
Title of host publication: Chernobyl Bioenergy Project. Power production from radioactively contaminated biomass and forest litter in Belarus. Final report, phase 1
Place of publication: Fredericia (DK)
Indoor resuspension considerations

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Contributors: Andersson, K. G.
Publication date: 1998
Peer-reviewed: No
Event: Abstract from Dermal exposure network meeting, Seville (ES), 14-16 Oct.
Source: orbit
Source-ID: 298177
Research output: Research › Conference abstract for conference – Annual report year: 1998

Mechanical decontamination tests in areas affected by the Chernobyl accident

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy, Radiation Research Division
Number of pages: 98
Publication date: 1998
Publication information
ISBN (Print): 87-550-2361-4
Original language: English
(Denmark. Forskningscenter Risoe. Risø-R; No. 1029(EN)).
Keywords: Risø-R-1029, Risø-R-1029(EN)
Electronic versions:
ris_r_1029.pdf
Source: orbit
Source-ID: 298015
Research output: Research › Report – Annual report year: 1998

Quantitative measurement of aerosol deposition on skin, hair and clothing for dosimetric assessment

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Contributors: Roed, J., Andersson, K. G., Bell, K., Byrne, M., Fogh, C., Goddard, A., Vollmair, D.
Number of pages: 43
Publication date: 1998
Publication information
ISBN (Print): 87-550-2360-6
Original language: English
(Denmark. Forskningscenter Risoe. Risø-R; No. 1028(EN)).
Keywords: Risø-R-1028, Risø-R-1028(EN)
Electronic versions:
ris_r_1028.pdf
Source: orbit
Source-ID: 298960
Research output: Research › Report – Annual report year: 1998

Radiation doses received by operators of a Belarussian power plant fired with contaminated bio-mass

General information
State: Published
Decontamination in a Russian settlement

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Contributors: Roed, J., Lange, C., Andersson, K. G.
Pages: 477-477
Publication date: 1997

Host publication information
Place of publication: Reykjavik
Publisher: Nordic Radiation Protection Society
Editors: Walderhaug, T., Gudlaugsson, E.
Source: orbit
Source-ID: 296690
Research output: Research › Book chapter – Annual report year: 1998

The fate and impact of radiocontaminants in urban areas

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Contributors: Roed, J., Andersson, K. G., Lange, C.
Pages: 109-119
Publication date: 1997

Host publication information
Title of host publication: Health impacts of large releases of radionuclides
Place of publication: Chichester
Publisher: John Wiley & Sons
Editors: Lake, J., Bock, G., Cardew, G.
(Ciba Foundation Symposium, 203).
Source: orbit
Source-ID: 297155
Research output: Research › Conference abstract in proceedings – Annual report year: 1997

Clean-up of urban areas in the CIS countries contaminated by Chernobyl fallout

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Contributors: Roed, J., Andersson, K. G.
Pages: 107-116
Publication date: 1996
Peer-reviewed: Yes

Publication information
Journal: Journal of Environmental Radioactivity
Volume: 33
ISSN (Print): 0265-931X
Ratings:
BFI (2018): BFI-level 1
Web of Science (2018): Indexed yes
BFI (2017): BFI-level 1
Scopus rating (2017): CiteScore 2.26 SJR 0.989 SNIP 1.377
Web of Science (2017): Impact factor 2.263
Web of Science (2017): Indexed yes
Decontamination in a Russian settlement

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Number of pages: 102
Publication date: 1996

Publication information
ISBN (Print): 87-550-2152-2
Original language: English
(Denmark. Forskningscenter Risoe. Risoe-R; No. 870(EN)).
Keywords: Risø-R-870, Risø-R-870(EN)
Source: orbit
Source-ID: 295608
Research output: Research › Report – Annual report year: 1996

Distribution of radionuclides in urban areas and their removal

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Contributors: Roed, J., Andersson, K. G., Sobotovitch, E., Garger, E., Matveenko, I.
Pages: 49-58
Publication date: 1996

Host publication information
Title of host publication: The radiological consequences of the Chernobyl accident
Volume: EUR-16544
Place of publication: Brussels
Publisher: European Commission
Editors: Karaoglou, A., Desmet, G., Kelly, G., Menzel, H.
Source: orbit
Source-ID: 295757
Research output: Research › Article in proceedings – Annual report year: 1996

Evaluation of early phase nuclear accident clean-up procedures for Nordic residential areas

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Contributors: Andersson, K. G.
Number of pages: 93
Publication date: 1996

Publication information
ISBN (Print): 87-550-2250-2
Original language: English
(NKS/EKO-5(96)18).
Source: orbit
Source-ID: 294677
Research output: Research › Report – Annual report year: 1996

Modelling external radiation doses in contaminated urban areas: Implications for development of decontamination strategies
Modelling of the radiological impact of a deposit of artificial radionuclides in inhabited areas

Radionuclide distributions in undisturbed soil and related gamma dose rates in air

Review of current external dose models and recent experimental research on the deposition and subsequent relocation of artificial radionuclides
The fate and impact of radio-contaminants in urban areas

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Contributors: Roed, J., Andersson, K. G., Lange, C.
Publication date: 1996
Peer-reviewed: No
Event: Abstract from Ciba Foundation symposium No. 203, St. Petersburg, Russian Federation.

The skim and burial plough: A new implement for reclamation of radioactively contaminated land

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Contributors: Roed, J., Andersson, K. G., Prip, H.
Pages: 117-128
Publication date: 1996
Peer-reviewed: Yes

Publication Information
Journal: Journal of Environmental Radioactivity
Volume: 33
ISSN (Print): 0265-931X
Ratings:
BFI (2018): BFI-level 1
Web of Science (2018): Indexed yes
BFI (2017): BFI-level 1
Scopus rating (2017): CiteScore 2.26 SJR 0.989 SNIP 1.377
Web of Science (2017): Impact factor 2.263
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 2.39 SJR 0.956 SNIP 1.488
Web of Science (2016): Impact factor 2.31
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): CiteScore 2.62 SJR 1.147 SNIP 1.555
Web of Science (2015): Impact factor 2.047
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): CiteScore 2.54 SJR 1.061 SNIP 1.72
Web of Science (2014): Impact factor 2.483
BFI (2013): BFI-level 1
Scopus rating (2013): CiteScore 2.97 SJR 1.613 SNIP 2.059
Web of Science (2013): Impact factor 3.571
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): CiteScore 1.95 SJR 1.082 SNIP 1.71
Web of Science (2012): Impact factor 2.119
ISI indexed (2012): ISI indexed yes
Weathering of radionuclides deposited in inhabited areas

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Contributors: Roed, J., Andersson, K. G., Togawa, O.
Pages: 167-169
Publication date: 1996

Host publication information
Place of publication: Seibersdorf
Publisher: IRPA
Source: orbit
Source-ID: 295722
Research output: Research › Article in proceedings – Annual report year: 1996
Weathering of \(^{137}\text{Cs}\) on various surfaces in inhabited areas and calculated location factors

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Contributors: Andersson, K. G., Roed, J., Jacob, P., Meckbach, R.
Pages: 47-57
Publication date: 1996

Host publication information
Title of host publication: Deposition of radionuclides, their subsequent relocation in the environment and resulting implications. Final report
Volume: EUR-16604
Source: orbit
Source-ID: 294264
Research output: Research › Book chapter – Annual report year: 1996

Neutron activation analysis of impactor experiment size distribution of atmospheric trace elements 'Høj 1994'

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Contributors: Lange, C., Prip, H., Olsen, S., Andersson, K. G.
Publication date: 1995
Peer-reviewed: No
Event: Abstract from Dansk Selskab for Miljøkemi og DCAR årsmøde, København, Denmark.
Source: orbit
Source-ID: 294036
Research output: Research › Conference abstract for conference – Annual report year: 1995

Practical means for decontamination 9 years after a nuclear accident
Nine years after the Chernobyl accident, the contamination problems of the most severely affected areas remain unsolved. As a consequence of this, large previously inhabited areas and areas of farmland now lie deserted. An international group of scientists funded by the EU European Collaboration Programme (ECP/4) has investigated in practice a great number of feasible means to solve the current problems. The basic results of this work group are presented in this report that was prepared in a format which facilitates an intercomparison (cost-benefit analysis) of the individual examined techniques for decontamination or dose reduction in various different types of environmental scenarios. Each file containing information on a method or procedure was created by the persons and institutes responsible for the practical trial. Although the long period that has elapsed since the contamination took place has added to the difficulties in removing the radioactive matter, it could be concluded that many of the methods are still capable of reducing the dose level substantially

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Contributors: Roed, J., Andersson, K. G., Prip, H.
Number of pages: 82
Publication date: 1995

Publication information
ISBN (Print): 87-550-2080-1
Original language: English
(Denmark. Forskningscenter Risoe. Risoe-R; No. 828(EN)).
Keywords: Risø-R-828, Risø-R-828(EN)
Electronic versions:
ris_r_828.pdf
Source: orbit
Source-ID: 293076
Research output: Research › Report – Annual report year: 1995

Cost-benefit analysis on cleanup of radioactive contaminated urban areas

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Removal of radioactive fallout from surface of soil and grassed surfaces using peelable coatings

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Contributors: Andersson, K. G., Roed, J.
Pages: 197-204
Publication date: 1994
Peer-reviewed: Yes

Publication information
Journal: Journal of Environmental Radioactivity
Volume: 22
ISSN (Print): 0265-931X
Ratings:
BFI (2018): BFI-level 1
Web of Science (2018): Indexed yes
BFI (2017): BFI-level 1
Scopus rating (2017): CiteScore 2.26 SJR 0.989 SNIP 1.377
Web of Science (2017): Impact factor 2.263
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 2.39 SJR 0.956 SNIP 1.488
Web of Science (2016): Impact factor 2.31
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): CiteScore 2.62 SJR 1.147 SNIP 1.555
Web of Science (2015): Impact factor 2.047
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): CiteScore 2.54 SJR 1.061 SNIP 1.72
Web of Science (2014): Impact factor 2.483
BFI (2013): BFI-level 1
Scopus rating (2013): CiteScore 2.97 SJR 1.613 SNIP 2.059
Web of Science (2013): Impact factor 3.571
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): CiteScore 1.95 SJR 1.082 SNIP 1.71
Web of Science (2012): Impact factor 2.119
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 1
The behaviour of Chernobyl $^{137}$Cs, $^{134}$Cs and $^{106}$Ru in undisturbed soil: Implications for external radiation

**General information**

State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Contributors: Andersson, K. G., Roed, J.
Pages: 183-196
Publication date: 1994
Peer-reviewed: Yes

**Publication information**

Journal: Journal of Environmental Radioactivity
Volume: 22
ISSN (Print): 0265-931X
Ratings:
BFI (2018): BFI-level 1
Web of Science (2018): Indexed yes
BFI (2017): BFI-level 1
Scopus rating (2017): CiteScore 2.26 SJR 0.989 SNIP 1.377
Web of Science (2017): Impact factor 2.263
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 2.39 SJR 0.956 SNIP 1.488
Web of Science (2016): Impact factor 2.31
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): CiteScore 2.62 SJR 1.147 SNIP 1.555
Web of Science (2015): Impact factor 2.047
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): CiteScore 2.54 SJR 1.061 SNIP 1.72
Web of Science (2014): Impact factor 2.483
BFI (2013): BFI-level 1
Scopus rating (2013): CiteScore 2.97 SJR 1.613 SNIP 2.059
Web of Science (2013): Impact factor 3.571
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): CiteScore 1.95 SJR 1.082 SNIP 1.71
Web of Science (2012): Impact factor 2.119
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): CiteScore 1.61 SJR 1.106 SNIP 1.638
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 1
Scopus rating (2010): SJR 0.913 SNIP 1.266
Web of Science (2010): Impact factor 1.466
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 1
Scopus rating (2009): SJR 0.956 SNIP 1.549
Web of Science (2009): Indexed yes
BFI (2008): BFI-level 1
Scopus rating (2008): SJR 0.752 SNIP 1.433
Web of Science (2008): Indexed yes
Scopus rating (2007): SJR 0.951 SNIP 1.257
Web of Science (2007): Indexed yes
Scopus rating (2006): SJR 0.799 SNIP 1.305
Web of Science (2006): Indexed yes
Scopus rating (2005): SJR 0.895 SNIP 1.403
Web of Science (2005): Indexed yes
Scopus rating (2004): SJR 0.753 SNIP 1.681
Web of Science (2004): Indexed yes
Scopus rating (2003): SJR 0.578 SNIP 0.916
Web of Science (2003): Indexed yes
Scopus rating (2002): SJR 0.595 SNIP 1.042
Web of Science (2002): Indexed yes
Scopus rating (2001): SJR 0.622 SNIP 1.101
Web of Science (2001): Indexed yes
Scopus rating (2000): SJR 1.08 SNIP 1.036
Web of Science (2000): Indexed yes
URGENT - a model for prediction of exposure from radiocaesium deposited in urban areas

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Contributors: Andersson, K. G.
Publication date: 1994
Peer-reviewed: No
Event: Abstract from GSF/CEC/IAEA/GAST Workshop on Dose Reconstruction, Bad Honnef, Germany.
Source: orbit
Source-ID: 292586
Research output: Research › Conference abstract for conference – Annual report year: 1994

Behaviour and decontamination of artificial radionuclides in the urban environment

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Contributors: Hewitt, C., Allott, R., Kelly, M., Roed, J., Andersson, K. G.
Pages: 275-290
Publication date: 1993

Host publication information
Title of host publication: Radioecology after Chernobyl. Biogeochemical pathways of artificial radionuclides
Place of publication: Chichester
Publisher: John Wiley & Sons
Editors: Warner, F., Harrison, R.
(SCOPE 50).
Source: orbit
Source-ID: 291179
Research output: Research › Book chapter – Annual report year: 1993

Cost-benefit analysis on clean-up of nuclear contaminated urban areas

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Contributors: Andersson, K. G., Roed, J.
Publication date: 1993
Peer-reviewed: No
Event: Abstract from KAN2 project meeting, Oslo (NO), 10-11 Nov, .
Source: orbit
Source-ID: 290748
Research output: Research › Conference abstract for conference – Annual report year: 1993

Design and development of a skim and burial plough for reclamation of contaminated land

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Contributors: Roed, J., Andersson, K. G., Gjørup, H.
Pages: 539-549
Publication date: 1993

Host publication information
Title of host publication: Radiation protection programme. Progress report 1990-91
Volume: EUR-14927
Development of strategies for clean-up in urban nuclear contamination scenarios

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Contributors: Roed, J., Andersson, K. G.
Publication date: 1993
Peer-reviewed: No
Event: Abstract from International Symposium on Remediation and Storation of Radioactive-Contaminated sites in Europe, Antwerp, Belgium.
Source: orbit
Research output: Research › Conference abstract for conference – Annual report year: 1993

Using in situ gamma-ray spectrometry to guide clean-up of radioactive contaminated urban areas

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Contributors: Roed, J., Andersson, K. G.
Number of pages: 155
Publication date: 1993

Host publication information
Title of host publication: 15. Mendeleev congress on general and applied Chemistry. Abstracts. Vol. 4
Place of publication: Minsk
Publisher: Navuka i Technika
Editors: Makatun, V., Mardilovic, I.
Source: orbit
Research output: Research › Conference abstract in proceedings – Annual report year: 1993

Improvement of practical countermeasures: The urban environment. Post-Chernobyl action. Final report

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Number of pages: 311
Publication date: 1991

Publication information
Original language: English
(EUR-12555).
Source: orbit
Source-ID: 299114
Research output: Research › Report – Annual report year: 1991

Reclamation of nuclear contaminated urban areas

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Contributors: Roed, J., Andersson, K. G., Sandalls, J.
Pages: 157-167
Publication date: 1991
The characterization and removal of Chernobyl debris in garden soils

Severe nuclear accidents such as the one in Chernobyl in 1986 may give unacceptably high external radiation levels, which even in the late phase may make a resettlement of an evacuated population impossible unless action is taken to decrease the exposure. As the urban land areas to be reclaimed may be very large the cost of the dose reducing countermeasure to be used may be an important factor. In the Chernobyl debris the most important radionuclides concerning the long term external radiation were found to be Cs137, Cs-134, and Ru-106. Therefore, the aim of this work is to investigate the behaviour of these radionuclides in garden soils, and on this background to examine cost-effective methods by which a reduction of the dose from such areas to people living in urban or sub-urban environments can be achieved. The fixation of the radioactive cations in soil was investigated by means of soil profile sampling, soil texture analysis, and speciation experiments. It was found that most of the Chernobyl fallout caesium was extremely firmly fixed. Much of the ruthenium was more loosely bound, to organic material. The cost-effectiveness of some dose reducing countermeasures was examined on the background of small scale tests. Here it was found that about 95 % of the activity could be removed with peel able fixatives based on PVA or lignin.

TACTUS: A code for simulation of the flow of caesium-137 in urban surroundings

TACTUS. A Code for Simulation of Flow of Caesium-137 in Urban Surroundings

General information
Projects:

Improving the decision base for emergency management in the event of airborne radioactive contamination of city areas
Hinrichsen, Y., PhD Student
Andersson, K. G., Main Supervisor
Roos, P., Supervisor
Institut stipendie (DTU)
15/12/2015 → 14/12/2018
Award relations: Improving the decision base for emergency management in the event of airborne radioactive contamination of city areas
Project: PhD

Activities:

Needs for re-parameterisation of the ECOSYS Ingestion model
Period: 14 Sep 2011 → 16 Sep 2011
Kasper Grann Andersson (Speaker)
Risø National Laboratory for Sustainable Energy
Radiation Research Division
Radioecology and Tracer Studies

Description
Place: International ARGOS Super Users Seminar, Brøndby (DK)

Related external organisation
Unknown external organisation
Activity: Talks and presentations › Conference presentations

What if a ‘dirty bomb’ scenario involved a strong, not readily soluble beta-particle emitting contaminant?
Period: 24 Jan 2011 → 28 Jan 2011
Kasper Grann Andersson (Speaker)
Risø National Laboratory for Sustainable Energy
Radiation Research Division
Radioecology and Tracer Studies

Description
Place: 3rd Technical Meeting on the environmental Modelling for Radiation Safety (EMRAS II) Intercomparison and Harmonization Project, Vienna (AT)

Related external organisation
Unknown external organisation
Activity: Talks and presentations › Conference presentations
Countermeasures for inhabited areas (with focus on late phase)
Period: 15 Sep 2008 → 19 Sep 2008
Kasper Grann Andersson (Lecturer)
Radiation Research Division
Radioecology and Tracer Studies
Risø National Laboratory for Sustainable Energy

Related event

Countermeasures for inhabited areas (with focus on late phase)
15/09/2008 → 19/09/2008
Training Course on Preparedness and Response for Nuclear and Radiological Emergencies, Mol (BE)
Activity: Talks and presentations › Guest lectures, external teaching and course activities at other universities