

CONTENTS

INTRODUCTORY PAPER

Trends in the design and operation of off-gas cleaning systems in nuclear facilities (Invited Paper) (IAEA-SM-245/62)	3
<i>M.W. First</i>	
Discussion	20

GENERAL ASPECTS OF THE MANAGEMENT OF GASEOUS WASTES FROM NUCLEAR FACILITIES (Session I)

IAEA activities in the field of gaseous waste management (IAEA-SM-245/63)	25
<i>Yu. Zabaluev</i>	
OECD Nuclear Energy Agency's programme in the management of radioactive gaseous wastes (IAEA-SM-245/64)	31
<i>E. Maestas</i>	
The European Community's research and development activities on the storage of gaseous wastes (IAEA-SM-245/18)	39
<i>B. Huber</i>	
United States programme for regulating radioactive airborne releases from licensed nuclear facilities (IAEA-SM-245/26)	45
<i>J.W.N. Hickey</i>	
Discussion	55

SOURCES AND CHARACTERISTICS OF OFF-GASES FROM NUCLEAR FACILITIES (Session II(a))

Background considerations in the immobilization of volatile radionuclides (IAEA-SM-245/8)	59
<i>H.A.C. McKay</i>	
Discussion	79
Radiolytically generated hydrogen from Purex solutions (IAEA-SM-245/13)	81
<i>R. Becker, H.-G. Burkhardt, K.H. Neeb, R. Würtz</i>	
Filtration and capture of semi-volatile nuclides (IAEA-SM-245/51)	91
<i>M. Klein, M. De Smet, W.R.A. Goossens, L.H. Baetsle</i>	
Discussion	100

Removal of nitrogen oxides, volatile radionuclides and aerosols formed in laboratory-scale denitration, calcination and solidification of simulated high-level wastes (IAEA-SM-245/54)	101
<i>F. Kepák, V. Pecák, E. Uher, J. Kaňka, S. Koutová, V. Matouš</i>	
Discussion	111

REMOVAL AND RETENTION OF RADIOIODINE, TRITIUM AND CARBON-14 (Sessions II(b) and III)

Применение кремнийорганических жидкостей в качестве поглотителей при абсорбционном способе улавливания ^{129}J (IAEA-SM-245/65)	115
<i>I. E. Нахутин, Л. Н. Растворов, Н. М. Смирнова, Г. А. Лошаков, Г. А. Лаушкина</i>	
(<i>The use of silicon-organic liquids as absorbents for the retention of ^{129}I: I.E. Nakhutin, L.N. Rastunov, N.M. Smirnova, G.A. Loshakov, G.A. Laushkina</i>)	
Discussion	122
Radioiodine in gaseous effluents from nuclear power plants (IAEA-SM-245/30)	123
<i>H. Till</i>	
Discussion	136
Improved procedures for efficient iodine removal from fuel solutions in reprocessing plants (IAEA-SM-245/16)	139
<i>E. Henrich, R. Hüfner, A. Sahm</i>	
Discussion	156
Separation of tritium from reprocessing effluents (IAEA-SM-245/52)	157
<i>A. Bruggeman, W. Doyen, R. Harnie, R. Leysen, L. Meynendonckx, M. Monsecour, W.R.A. Goossens, L.H. Baetsle</i>	
Discussion	173
The concentration of tritium in the aqueous and solid waste of LWR fuel reprocessing plants (IAEA-SM-245/15)	177
<i>E. Henrich, H. Schmieder, K.H. Neeb</i>	
Discussion	189
Processes for the control of $^{14}\text{CO}_2$ during reprocessing (IAEA-SM-245/29)	191
<i>K.J. Notz, D.W. Holladay, C.W. Forsberg, G.L. Haag</i>	
Discussion	209
Retention of carbon-14 in nuclear facilities (IAEA-SM-245/9)	211
<i>H. Braun, H. Bonka, D. Gründler, H. Gutowski, J. Weber</i>	
Discussion	225

REMOVAL AND RETENTION OF NOBLE GASES (Session IV)

Catalytic reduction of O ₂ and NO _x : A critical pretreatment step for the cryogenic retention of krypton-85 (IAEA-SM-245/12)	229
<i>R. von Ammon, G. Knittel, E. Hutter</i>	
Discussion	242
Removal of noble gases by selective absorption (IAEA-SM-245/53)	243
<i>J.R. Merriman, M.J. Stephenson, B.E. Kanak, D.K. Little</i>	
Discussion	260
Containment of krypton in a metallic matrix by combined ion implantation and sputtering (IAEA-SM-245/7)	263
<i>D.S. Whitmell, R.S. Nelson, M.J.S. Smith</i>	
Discussion	277
Solid state containment of noble gases in sputter deposited metals and low density glasses (IAEA-SM-245/31)	279
<i>G.L. Tingey, E.D. McClanahan, M.A. Bayne, W.J. Gray</i>	
Long-term storage of krypton-85 in zeolites (IAEA-SM-245/10)	291
<i>R.-D. Penzhorn, P. Schuster, H.E. Noppel, L.M. Hellwig</i>	
Discussion	299

FILTRATION, SAMPLING AND MONITORING OF AIRBORNE EFFLUENTS (Session V)

Testing of high-efficiency aerosol filters by using a scintillation particle counter (IAEA-SM-245/35)	303
<i>W. Ullmann, S. Przyborowski</i>	
Discussion	312
Essais in situ et en laboratoire des filtres à iode en Italie (IAEA-SM-245/45)	315
<i>S. Lanza, M. Mazzini, U. Pisani</i>	
Discussion	330
Studies on sand-bed air filters for the treatment of fuel reprocessing dissolver off-gases (IAEA-SM-245/39)	333
<i>J.C. Kapoor, C. Srinivas, A.A. Khan, K.T. Thomas</i>	
Discussion	345
The estimation of tritium, sulphur-35 and carbon-14 in reactor coolant gas and gaseous effluents (IAEA-SM-245/33)	347
<i>A.R. Doyle, K. Hammond</i>	
Discussion	360
An improved Kanne tritium monitoring system (IAEA-SM-245/19)	363
<i>D.F. Anderson, R.D. Hiebert</i>	
Discussion	370

Behaviour of selected contaminants in spray calciner/in-can melter waste vitrification off-gas (IAEA-SM-245/24)	371
<i>M.S. Hanson, R.W. Goles, D.C. Hamilton</i>	
Discussion	390
Application of membranes to monitoring for tritiated water vapour (IAEA-SM-245/57)	393
<i>R.V. Osborne, R.G.C. McElroy</i>	
Discussion	407
OFF-GAS CLEANING SYSTEMS OPERATION (Session VI)	
Fifteen years experience filtering N-reactor gaseous wastes (IAEA-SM-245/22)	411
<i>K.L. Fowler</i>	
Discussion	428
Performances de la distillation cryogénique pour l'épuration de la couverture d'argon d'un réacteur à neutrons rapides (IAEA-SM-245/41)	431
<i>G. Bon Mardion, B. Dewanckel, A. Lafon, J. Verdier, J.-L. Violet, Y. Depierre</i>	
Discussion	442
Policy, testing and acceptance standards for treatment plant for gaseous discharges from CEGB nuclear power stations (IAEA-SM-245/34)	445
<i>D.J. Groom, C.W. Fern, B.A. Wilkinson</i>	
Discussion	461
Experience gathered in monitoring the emissions from an incineration facility for radioactive wastes (IAEA-SM-245/4)	463
<i>L.A. König, H. Schüttelkopf, B. Fessler</i>	
Discussion	479
Operational experience with a $25 \text{ m}^3 \cdot \text{h}^{-1}$ simulated dissolver off-gas purification loop (IAEA-SM-245/49)	481
<i>G.E.R. Collard, P.J. Vaesen, W.R.A. Goossens, L.H. Baetsle</i>	
Discussion	493
OFF-GAS CLEANING SYSTEMS DESIGN (Session VII)	
Some aspects of the treatment of typical off-gas streams from reprocessing plants (IAEA-SM-245/37)	497
<i>S.A.K. Jeelani, G.R. Balasubramanian</i>	
Discussion	516

Basic design requirements for the containment system of a mixed oxide fuel fabrication plant (IAEA-SM-245/43)	519
<i>A. Cardinale, P. Grillo</i>	
Off-gas cleanup system designed for HLLW-vitrification in a liquid-fed ceramic waste melter (IAEA-SM-245/36)	531
<i>S. Weisenburger, H. Seiffert</i>	
Discussion	542
Design of a PWR gaseous radwaste treatment system ensuring safe control of gaseous radionuclides released under normal and severe conditions (IAEA-SM-245/55)	545
<i>R.G. Glibert, G.R. Nuyt, P. Fission, G.E.R. Collard</i>	
Discussion	555
Rétention des gaz et aérosols radioactifs dans les effluents humides du retraitement (IAEA-SM-245/42)	557
<i>J.P. Goumondy, J.L. Rouyer, J.P. Roux, D. Vigla</i>	
Discussion	568
The ageing of charcoals used to trap radioiodine (IAEA-SM-245/17)	571
<i>R.D. Collins, J.J. Hillary, L.R. Taylor, F. Abbey</i>	
Discussion	593
STORAGE AND DISPOSAL (Session VIII)	
Study on the possibility of sea-disposal of krypton-85 (IAEA-SM-245/1)	597
<i>A. van Dalen, L.H. Vons, B. Verkerk</i>	
Discussion	611
Alternative concepts for storage and disposal of tritiated waste water arising from reprocessing (IAEA-SM-245/6)	615
<i>K. Hartmann, H. Brücher</i>	
Stockage dans des cylindres pressurisés du krypton adsorbé sur du charbon actif – Aspects fondamentaux (IAEA-SM-245/50)	627
<i>P.N. Henrion, J.F. de Greef, W. Claes, A. Leurs</i>	
Discussion	643
Air-cooled krypton-85 storage facility with natural convection (IAEA-SM-245/11)	645
<i>E. Warnecke, S. Ahner</i>	
Discussion	658
Round Table Discussion	661
Chairmen of Sessions and Secretariat of the Symposium	677
List of Participants	679
Author Index	697
Transliteration Index	699