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December 08, 2003

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U.S. Nuclear Regulatory Commission,
Document Control Desk,
Washington, D.C. 20555

Attention: Ms. B. Sosa
Project Manager, ACR

Reference: 1. Letter V. Langman to B. Sosa, "Further to the ACR Pre-Application Plan – Detailed Deliverables and Schedule for Focus Topics", December 18, 2002.

Re: **Technology Base for CANDU Genealogy Aspects of ACR: Selected Papers on Fuel, Fuel Channel, Fission Product Release, and Fission Product Transport**

In support of NRC's pre-application review of the ACR and in particular to assist NRC's staff review of focus topic # 12 (ACR Technology Base) of attachment 1 to Reference 1, attachment 1 to this letter contains a list of selected most relevant publicly available technical papers in the areas of fuel, fuel channel, and fission product behavior.

If you have any questions on this letter and/or the attached information please contact the undersigned at (905) 823-9060 extension 6543.

Yours sincerely,

Vince Langman

Vince J. Langman
ACR Licensing Manager

/Attachments:

1. List of selected relevant publicly available technical papers on fuel, fuel channel, and fission product release and transport behavior.

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Attachment 1
(Letter V. Langman to B. Sosa, "Technology Base for CANDU Genealogy Aspects of ACR: Selected Papers on Fuel, Fuel Channel, Fission Product Release, and Fission Product Transport", December 08, 2003)

List of selected relevant publicly available technical papers on fuel, fuel channel, and fission product release and transport behavior

1.1 A Selected Bibliography of Publications on Fuel-Channel High-Temperature Transient Research

Selected publications on research relating to the Fuel-Channel High-Temperature Transient Program are listed in this bibliography. The publications have been sorted into subject areas and sorted by year and principal author. The bibliography will provide the reader with a preliminary reference source for the specific subject area selected.

A. PRESSURE-TUBE BALLOONING

1. Q.M. Lei, H.Z. Fan, "An Improved Model to Predict Nonuniform Deformation of Zr-2.5 Nb Pressure Tubes", Proceedings of the CNS Annual Conference, Toronto, ON, June 1997.

2. J.R. Riznic, L.D. MacDonald, "Pressure Tube Ballooning Experiments Analysis", Proceedings of the CNS Annual Conference, Toronto, ON, June 1997.

3. W.C. Muir, M.H. Bayoumi, "Prediction of Pressure Tube Ballooning Under Non-Uniform Circumferential Temperature Gradients and High Internal Pressure", Proceedings of the Fifth International Conference on Simulation Methods in Nuclear Engineering, Montreal, PQ, September 1996.

4. R.S.W. Shewfelt, D.P. Godin, "Ballooning of Thin-Walled Tubes with Circumferential Temperature Variations", Res Mechanica, Vol. 18, pp. 21-23, Available as AECL 8317, 1986.

5. R.S.W. Shewfelt, D.P. Godin, "The Effect of Axial Scratches on the Ductile Creep Rupture of Internally Pressurized Thin-Walled Tubes", Res Mechanica, Vol. 13, pp. 1-13, 1985.

6. R.S.W. Shewfelt, "The Anisotropic Deformation of Zr-2.5 Wt% Nb CANDU Pressure Tubes Between 20 and 700°C", Canadian Metallurgical Quarterly, Vol. 23, No. 4, pp. 441-445, Available as AECL 8170, 1984.

7. R.S.W. Shewfelt, D.P. Godin, L.W. Lyall, "Verification Tests of the High-Temperature Transverse Creep Model for Zr 2.5% Nb Pressure Tubes", AECL-7813, February 1984.

8. R.S.W. Shewfelt, L.W. Lyall, D.P. Godin, "A High-Temperature Creep Model for Zr-2.5 wt% Nb Pressure Tubes", Journal of Nuclear Materials, Vol. 125, pp. 228-235, 1984.

9. E.T.C Ho, V. Perovic, "Deformation Behaviour of Zr-2.5 Wt% Nb in the Temperature Range 723-1023 K", Proceedings of the 4th RISO International Symposium on Metallurgy and Materials Science, RISO National Laboratory, Roskilde, Denmark, pp. 301-306, 1983.

10. R.S.W. Shewfelt, "Ballooning of Thin-Walled Tubes with an Azimuthal Temperature Gradient", AECL-7799, September 1983.

11. R.S.W. Shewfelt, "The Anisotropic Deformation of Zr-2.5% Nb Pressure Tubes", Canadian Metallurgical Quarterly, Vol. 23, pp. 441-445, Also presented at the 22nd Annual Conference of Metallurgists, Edmonton, AB, 1983.

12. C.K. Chow, R.S.W. Shewfelt, "Deformation of Zr-2.5% Nb Pressure Tubes from 400-1200°C", Presented at the 21st Annual Conference of Metallurgists, Toronto, ON, August 1982.

13. R.W.L Fong, C.K. Chow, "High Temperature Transient Creep Properties of CANDU Pressure Tubes", Presented at the 23rd Annual Conference of the Canadian Nuclear Society, Toronto, ON, AECL-12143, June 2002.

B. PRESSURE TUBE / CALANDRIA TUBE CONTACT AND HEAT TRANSFER

14. M.J. Brown, K.K. Fung, T.P. Byrne, "Subcooled Nucleate Boiling Heat Transfer from a Large Diameter Tube", Proceedings of the National Heat Transfer Conference, Houston, TX, August 1996.

15. W.C. Muir, M.H. Bayoumi, "Prediction of Pressure Tube Ballooning Under Non-Uniform Circumferential Temperature Gradients and High Internal Pressure", Proceedings of the Fifth International Conference on Simulation Methods in Nuclear Engineering, Montreal, PQ, September 1996.

16. G.E. Gillespie, R.G. Moyer, G. Hadaller, J.G. Hildebrandt, "An Experimental Investigation into the Development of Pressure Tube/Calandria Tube Contact and Associated Heat Transfer under LOCA Conditions", Proceedings of the 6th Annual CNS Conference, Ottawa, ON, pp. 2.24-2.30, June 1985.

17. D.A. Scarth, C.B. So, K.A. Ahluwalia, A.M.C. Chan, M. Shourki, K.H. Ardron, "The Effect of Subcooled Boiling on the Rewetting of Hot Horizontal Tubes", 11th Symposium on Simulation of Reactor Dynamics and Plant Control, 1985.

18. C.B. So, K.H. Ardron, "Numerical Simulation of the Rewetting of a Horizontal Tube Using a Two-Fluid Model", The First International Workshop on Fundamental Aspects of Post-Dryout Heat Transfer, pp. 205-230, 1984.

19. G.E. Gillespie, R.G. Moyer, P.D. Thompson, "Moderator Boiling on the External Surface of a Calandria Tube in a CANDU Reactor during a Loss-of-Coolant Accident", Proceedings of the International Meeting on Thermal Nuclear Reactor Safety, Chicago, IL, Available as AECL-7664, August 1982.

20. J.T. Rogers, T.C. Currie, "Analysis of Transient Dry Patch Behaviour on CANDU Reactor Calandria Tubes in a LOCA With Late Stagnation and Impaired ECI", Proceedings of the International Meeting on Thermal Nuclear Reactor Safety, Chicago, IL, (NUREG/CP-0027 Volume 3) 1982.

21. G.E. Gillespie, "An Experimental Investigation of Heat Transfer from a Reactor Fuel Channel to Surrounding Water", Proceedings of the 2nd Annual CNS Conference, Ottawa, ON, June 1981.

C. PRESSURE-TUBE CIRCUMFERENTIAL TEMPERATURE DISTRIBUTION

22. Q.M. Lei, T.M. Goodman, D.B. Sanderson, "Modelling Thermalhydraulic/Thermal-Mechanical Behaivour of a Fuel Channel with Stratified Two-Phase Flow Using CATHENA", Proceedings of the Fifth International Conference on Simulation Methods in Nuclear Engineering, Montreal, PQ, September 1996.

23. M.H. Bayoumi, W.C. Muir, P.S. Kundurpi, "Simulation and Investigation of the Pressure Tube Circumferential Temperature Distribution Experiments (Boil-Off Experiments Series)", Proceedings of 15th Annual CNS Conference, Montreal, PQ, June 1994.

24. M.H. Bayoumi, W.C. Muir, P.S. Kundurpi, "Simulation of the Pressure Tube Circumferential Temperature Distribution Experiments (Variable Make-up Water Experiments)", Proceedings of International Nuclear Congress (INC'93), Toronto, ON, October 1993.

25. M.H. Bayoumi, W.C. Muir, P.S. Kundurpi, "Simulation of the Pressure Tube Circumferential Temperature Distribution Experiments (Boil-Off Experiments)", Fourth International Conference on Simulation Methods in Nuclear Engineering, Montreal, PQ, June 1993.

26. M. Bayoumi, W.C. Muir, P.S. Kundurpi, "Further Simulation of the Pressure Tube Circumferential Temperature Distribution Experiments (Make-Up Water Experiments)", Presented at the 13th Annual CNS Conference, Saint John, NB, June 1992.

27. Q.M. Lei, D.B. Sanderson, M.L. Swanson, G.A. Walters, H.E. Rosinger, "Experimental and Theoretical Investigation of Pressure Tube Circumferential Temperature Gradients During Coolant Boil-Off", Presented at the 13th Annual CNS Conference, Saint John, NB, June 1992.

28. B.G. Taylor, D.G. Litke, D.B. Sanderson, "Temperature Gradients on Pressure Tubes Due to Steam During Stratified Two-Phase Flow Experiments", Presented at 12th Annual CNS Conference, Saskatoon, SK, June 1991.

29. P.A. Yuen, K.A. Haugen, D.G. Litke, R.G. Moyer, H.E. Rosinger, "The Experimental Measurement of Circumferential Temperature Distributions Developed on Pressure Tubes Under Stratified Two-Phase Flow Conditions: Tests 1 to 5", Proceedings of the 10th Annual CNS Conference, Ottawa, ON, pp. 9.18-9.25, June 1989.

30. H.E. Rosinger, C.B. So, P.A. Yuen, "The Determination and Verification of Circumferential Temperature Distributions in CANDU-PHW Reactor Fuel Channel Assemblies Under Coolant Flow Stagnation", Proceedings of the International Conference on Thermal Reactor Safety, Avignon, France, pp. 2215-2228, October 1988.

31. P.A. Yuen, C.B. So, R.G. Moyer, D.G. Litke, "The Experimental Measurement of Circumferential Temperature Distributions Developed on Pressure Tubes Under Stratified Two-Phase Flow Conditions", Proceedings of the 9th Annual CNS Conference, Winnipeg, MB, pp. 120-126, June 1988.

32. C.B. So, "Modelling the Steam Temperature Distribution in CATHENA and its Application to Pressure Tube Circumferential Temperature Distribution Analysis", 13th CNS Reactor Simulation Symposium, Chalk River Nuclear Laboratories, Chalk River, ON, April 1987.

33. C.B. So, G.E. Gillespie, R.G. Moyer, D.G. Litke, "The Experimental Determination of Circumferential Temperature Distributions Developed in Pressure Tubes During Slow Coolant Boildown", Proceedings of the 8th Annual CNS Conference, Saint John, NB, pp. 241-248, June 1987.

D. CONTACT CONDUCTANCE

34. J.W. DeVaal, M.M. Yovanovich, K.J. Negus, "The Effects of Surface Slope Anisotropy on the Contact Conductance of Conforming Rough Surfaces", Presented at the 24th National Heat Transfer Conference and Exhibition, Pittsburgh, PA, August 1987.

35. M.H. Schankula, J.W. DeVaal, V.D. Kroeger, "A Gap Conductance Model for Wavy Surface Contact in Concentric Tubes", Proceedings of the ASME-JSME Thermal Engineering Joint Conference, pp. 661-665, Available as AECL-9315, 1987.

36. F.J. Hughes, M.H. Schankula, J.W. DeVaal, "Surface Topography with a Computer-Aided Stylus Profilometer", Surface Canada '86 Conference, London, ON, June 1986.

37. M.H. Schankula, J.W. DeVaal, V.D. Kroeger, "Effect of Plastically Formed Surface Waves on the Thermal Resistance of an Expanded Pressure Tube in Contact with a Surrounding Concentric Calandria Tube", Proceedings of the 8th International Heat Transfer Conference, Vol. 2, pp. 645-649, Available as AECL 9031, August 1986.

38. G.R. McGee, M.H. Schankula, M.M. Yovanovich, "Thermal Resistance of Cylinder-Flat Contacts: Theoretical Analysis and Experimental Verification of a Line-Contact Model", Nuclear Engineering and Design 86 (1985), pp. 369-381, Available as AECL 8434, 1984.

39. M.H. Schankula, D.W. Patterson, M.M. Yovanovich, "The Effect of Oxide Films on the Thermal Resistance Between Contacting Zirconium Alloys", Presented at International Conference on Materials in Nuclear Energy, Huntsville, ON, 1982.

E. PRESSURE-TUBE SAG

40. G.E. Gillespie, R.G. Moyer, G.I. Hadaller, "An Experimental Investigation of the Creep Sag of Pressure Tubes Under LOCA Conditions", Proceedings of the 5th Annual CNS Conference, Saskatoon, SK, 1984.

41. Q.M. Lei, M.H. Bayoumi (OPG), "Assessments of Effects of Pressure Tube to Calandria Tube Sagging Contact on Safety Analysis Results", 22nd Annual Conference of the Canadian nuclear Society, Toronto, ON, June 10-13, 2001.

F. FUEL-CHANNEL THERMAL-CHEMICAL BEHAVIOUR

42. P.J. Mills, D.B. Sanderson, K.A. Haugen, G.G. Kaacke, "Twenty-Eight-Element Fuel-Channel Thermal-Chemical Experiments", Proceedings of the 17th Annual CNS Conference, Fredericton, NB, June 1996.

43. M.H. Bayoumi, W.C. Muir, "Post-Test Simulation and Analysis of the Second Full Scale CHAN 28-Element Experiment (Validations of CHAN-II (MOD 6) Against Experiments)", Proceedings of the 16th Annual CNS Conference, Saskatoon, SK, June 1995.

44. H.S. Lim, K.M. Lee, M.Y. Ohn, N.H. Lee, J.H. Choi, "Validation of CATHENA Against the CS28-1 High Temperature Experiment Under an Impaired Cooling Condition", Ann. Nucl. Energy, Vol. 22, No. 9, pp. 593-600, 1995.

45. Q.M. Lei, D.B. Sanderson, H.E. Rosinger, "High-Temperature Validation of CATHENA Against a 28-Element Thermal-Chemical Experiment", Presented at the CNS Annual Conference, Montreal, PQ, June 1994.

46. Q.M. Lei, D.B. Sanderson, K.A. Haugen, H.E. Rosinger, "Post-Test Analysis of the 28-Element High Temperature Thermal-Chemical Experiment CS28-1", Presented at the 4th International Conference on Simulation Methods in Nuclear Engineering, Montreal, PQ, June 1993.

47. Q.M. Lei, D.B. Sanderson, H.E. Rosinger, "Pre-Test Simulations of a 28-Element High-Temperature Thermal-Chemical Experiment Using the Computer Codes CATHENA and CHAN-II-WL", Presented at the 13th Annual CNS Conference, Saint John, NB, June 1992.

48. Q.M. Lei, D.B. Sanderson, M.J. Brown, H.E. Rosinger, "Comparison of CHAN-II-WL Predictions with Measurements Made During Seven-Element High-Temperature Thermal-Chemical Experiments", Presented at the 12th Annual CNS Conference, Saskatoon, SK, June 1991.

49. J.P. Mallory, M.A. Wright, H. Huynh, "Validation of CATHENA at High-Temperature Conditions Using CHAN Thermal-Chemical Experiment Results", Presented at the 12th Annual CNS Conference, Saskatoon, SK, June 1991.

50. D.B. Sanderson, K.A. Haugen, R.G. Moyer, H.E. Rosinger, "Out-of-Pile Fuel Channel Experiments for Severe Accident Conditions", Proceedings of the American Nuclear Society International Topical Meeting on Safety of Thermal Reactors, Portland, OR, pp. 92-100, July 1991.

51. D.B. Sanderson, Q.M. Lei, J.P. Mallory, M. Bayoumi, "A Blind Simulation Study of an Out-Of-Pile High-Temperature Fuel Channel Experiment", Presented at the 16th Annual CNS Nuclear Simulation Symposium, Saint John, NB, August 1991.

52. N.C. Singhal, A.C.D Wright, V.I. Nath, "Comparison of CATHENA and CHAN2A (MOD1) Code Predictions for LOCA/LOECC Conditions", Presented at the 16th Annual CNS Nuclear Simulation Symposium, Saint John, NB, August 1991.

53. M.H. Bayoumi, A.P. Muzumdar, F.B.P. Tran, K.E. Locke, "CHAN-II (Mod 6) Further Verification Against Single and Seven Element Experiments", Proceedings of the 11th Annual CNS Conference, Toronto, ON, pp. 4.15-4.22, June 1990.

54. M.H. Bayoumi, F.B.P. Tran, K.E. Locke, A.P. Muzumdar, "Verification of CHAN-II (Mod 6) Against Experiments", Proceedings of the 10th Annual CNS Conference, Ottawa, ON, pp. 6.10-6.18, June 1989.

55. J.G. Hildebrandt, "Models for Analysing the Radial Heat Transfer in CANDU Reactor Fuel Channels during High-Temperature Loss-of-Coolant Accidents", Proceedings of the 6th Annual CNS Conference, Ottawa, ON, June 1985.

56. J.G. Hildebrandt, C.B. So, G.E. Gillespie, G.A. MacLean, "Radial Heat Transfer from Fuel to Moderator during LOCAs for CANDU-PHW Reactors", Proceedings of the CNS International Conference on Numerical Methods in Nuclear Engineering, Montreal, PQ, September 1983.

57. G.E. Gillespie, W.C. Harrison, J.G. Hildebrandt, G.A. Ledoux, "Thermal Behaviour of a CANDU-PHW Reactor Fuel Channel Containing Nearly Stagnant Steam", Proceedings of the International Meeting on Thermal Nuclear Reactor Safety, Chicago, IL, August 1982.

G. OVERVIEW PAPERS

58. M.H. Bayoumi, W.C. Muir, "Methodology for Fuel Channel Integrity in Large Break Loss of Coolant Accident", Proceedings of the CNS Annual Conference, Toronto, ON, June 1997.

59. L.A. Simpson, P.M. Mathew, A.P. Muzumdar, D.B. Sanderson, V.G. Snell, "Severe Accident Phenomena and Research for CANDU Reactors", Proceedings of the 10th Pacific Basin Nuclear Conference, Kobe, Japan, October 1996.

60. D.B. Sanderson, R.G. Moyer, R. Dutton, "Effectiveness of the Moderator as a Heat Sink During a Loss-of-Coolant Accident in a CANDU-PHW Reactor", Proceedings of the International Centre for Heat and Mass Transfer Conference, Cesme, Turkey, May 1995.

61. R.S. Hart, V.G. Snell, L.A. Simpson, D.B. Sanderson, "Passive Heat Removal in CANDU", Proceedings of the IAEA Advanced Group Meeting on Technical Feasibility and Reliability of Passive Safety Systems, Julich, Germany, November 1994.

62. D. Diamond (Session Organizer), "CANDU Reactor Safety - Paper Summaries", Transaction of the 1993 Annual Meeting of the American Nuclear Society, San Diego, CA, pp. 291-299, June 1993.

63. G.L. Brooks, V.G. Snell, P.J. Allen, J.M. Hopwood, J.Q. Howieson, "The Approach to Enhancing CANDU Safety", Presented at the 8th Pacific Basin Nuclear Conference, Taipei, April 1992.

64. H. Tamm, V.S. Krishnan, H.E. Rosinger, A.C. Vikis, J.C. Wood, D.J. Wren, "Overview of the Technical Basis for the Safety of CANDU Reactors", International Symposium on Nuclear Safety, Tokyo, Available as AECL-9559, December 1987.

65. W.T. Hancox, "Safety Research for CANDU Reactors", Proceedings of the IAEA Technical Committee Meeting on Thermal Reactor Safety Research, Moscow, December 1981.

H. BUNDLE DEFORMATION

66. R. Choubey, D.J. Wren, A.E. Unger, K.J. George, P.J. Fehrenbach, "Metallographic Examination of a CANDU Fuel Bundle Heated under Severe Accident Conditions", Proceedings of the 7th Annual CNS Conference, Toronto, ON, June 1986.

67. S.L. Wadsworth, G.I. Hadaller, R.M. Sawala, E. Kohn, "Experimental Investigation of CANDU Fuel Deformation during Severely Degraded Cooling", Proceedings of the International ANS/ENS Topical Meeting on Thermal Reactor Safety, San Diego, CA, February 1986.

68. E. Kohn, G.I. Hadaller, R.M. Sawala, G.H. Archinoff, S.L. Wadsworth, "CANDU Fuel Deformation During Degraded Cooling (Experimental Results)", Proceedings of the 6th Annual CNS Conference, Ottawa, ON, June 1985.

69. G.I. Hadaller, R. Sawala, E. Kohn, G.H. Archinoff, S.L. Wadsworth, "Experiments Investigating the Thermal-Mechanical Behaviour of CANDU Fuel under Severely Degraded Cooling", Proceedings of the 5th International Meeting on Thermal Nuclear Reactor Safety, Karlsruhe, Germany, September 1984.

70. G.I. Hadaller, G.H. Archinoff, E. Kohn, "CANDU Fuel Bundle Behaviour during Degraded Cooling Conditions", Proceedings of the 4th Annual CNS Conference, Montreal, PQ, June 1983.

I. BEARING-PAD/PRESSURE-TUBE INTERACTION

71. M.H. Bayoumi, W.C. Muir, P.B. Middleton, "Simulation and Analysis of Bearing Pad to Pressure Tube Contact Heat Transfer Under Large Break LOCA Conditions", Proceedings of the 17th Annual CNS Conference, Fredericton, NB, June 1996.

72. C. Manu, R.S.W. Shewfelt, A.C.D Wright, R. Aboud, J.H.K. Lau, D.B. Sanderson, "Bulging of Pressure Tubes at Hot Spots Under LOCA Conditions", Proceedings of the Fifth International Conference on Simulation Methods in Nuclear Engineering, Montreal, PQ, September 1996.

73. T. Nitheanandan, Q.M. Lei, R.G. Moyer, "The Analysis of Bearing-Pad to Pressure-Tube Contact Heat Transfer Experiments", Proceedings of the 17th Annual CNS Conference, Fredericton, NB, June 1996.

74. M.H. Bayoumi, W.C. Muir, P.B. Middleton, "Simulation and Analysis of Bearing Pad to Pressure Tube Contact Heat Transfer Under Large Break LOCA Conditions", Proceedings of the 16th Annual CNS Conference, Saskatoon, SK, June 1995.

75. T. Nitheanandan, Q.M. Lei, R.G. Moyer, "Analysis of Bearing-Pad to Pressure-Tube Contact Heat Transfer", Presented at 18th Annual CNS Simulation Symposium, Pembroke, ON, October 1994.

76. R.G. Moyer, D.B. Sanderson, R.W. Tiede, H.E. Rosinger, "Bearing-Pad/Pressure-Tube Rupture Experiments", Presented at the 13th Annual CNS Conference, Saint John, NB, June 1992.

J. BEARING-PAD/PRESSURE-TUBE HEAT TRANSFER

77. M. Krause, P.M. Mathew, V.D. Kroeger, "Thermal Analysis of Bearing-Pad to Pressure-Tube Contact Heat Transfer Using ABAQUS", Fourth International Conference on Simulation Methods in Nuclear Engineering, Montreal, PQ, June 1993.

78. A.P. Muzumdar, G.R. Berzins, M. Krause, J.W. DeVaal, "ANSYS Thermal Analysis of Bearing Pad/Pressure Tube Interface", Third International CNS Conference on Simulation Methods in Nuclear Engineering, Montreal, PQ, April 1990.

79. J.W. DeVaal, M.H. Schankula, V.D. Kroeger, D.B. Reeves, A.P. Muzumdar, S.J. Sheridan, "An Experimental and Analytical Approach to Determine Bearing Pad to Pressure Tube Heat Transfer", Proceedings of the 9th Annual CNS Conference, Winnipeg, MB, pp. 110-119, June 1988.

K. FUEL/FUEL CLADDING BEHAVIOUR

80. P.M. Mathew, I.M. George, "Total Emissivity of Zircaloy-4 at High Temperatures", Proceedings of the 17th Annual CNS Conference, Fredericton, NB, June 1996.

81. P.J. Hayward, I.M. George, M.C. Arneson, "Dissolution of UO_2 Fuel by Molten Zircaloy-4", Presented at the 13th Annual CNS Conference, Saint John, NB, June 1992.

82. P.M. Mathew, M. Krause, M. Dean, M.H. Schankula, "Emittance of Zircaloy-4 Sheath at High Temperatures in Argon and Steam Atmospheres", Proceedings of the 10th Annual CNS Conference, Ottawa, ON, pp. 9.12-9.17, June 1989.

83. J. Ferner, H.E. Rosinger, "The Effect of Circumferential Temperature Variation on Fuel-Cladding Failure", Journal of Nuclear Materials, Vol. 132, pp. 167-172, Available as AECL 8518, 1985.

84. E. Kohn, G.I. Hadaller, R.M. Sawala, G.H. Archinoff, S.L. Wadsworth, "CANDU Fuel Deformation During Degraded Cooling (Experimental Results)", Proceedings of the 6th Annual CNS Conference, Ottawa, ON, pp. 16.39-16.45, June 1985.

85. H.E. Rosinger, K.W. Demoline, R.K. Rondeau, "The Dissolution of UO_2 by Molten Zircaloy-4 Cladding", AECL-8387, March 1985.

86. H.E. Rosinger, R.K. Rondeau, K.W. Demoline, K.J. Ross, "The Interaction and Dissolution of Solid UO_2 by Molten Zircaloy-4 Cladding in an Inert Atmosphere or Steam", Proceeding of the 6th Annual CNS Conference, Ottawa, ON, pp. 16.33-16.38, Available as AECL-8937, June 1985.

87. H.E. Rosinger, P.C. Bera, W.R. Clendening, "The Steady-State Creep of Zircaloy-4 Fuel Cladding from 940 to 1873 K", AECL-6193, November 1978.

L. FUEL-CHANNEL MODELLING USING CATHENA

88. L.N. Carlucci, J.R. Gauld, D.J. Richards, V.I. Arimescu, "Coupling Subroutine Version of ELOCA Code for High-Temperature Fuel Behaviour to CATHENA System Thermalhydraulics Code", Proceedings of the Fifth International Conference on Simulation Methods in Nucelar Engineering, Montreal, PQ, September 1996.

89. Q.M. Lei, T.M. Goodman, "Validation of Radiation Heat Transfer in CATHENA", Proceedings of the Fifth International Conference on Simulation Methods in Nuclear Engineering, Montreal, PQ, September 1996.

90. Q.M. Lei, T.M. Goodman, D.B. Sanderson, "Modelling Thermalhydraulic/Thermal-Mechanical Behaivour of a Fuel Channel with Stratified Two-Phase Flow Using CATHENA", Proceedings of the Fifth International Conference on Simulation Methods in Nuclear Engineering, Montreal, PQ, September 1996.

91. T. Nitheanandan, Q.M. Lei, R.G. Moyer, "The Analysis of Bearing-Pad to Pressure-Tube Contact Heat Transfer Experiments", Proceedings of the 17th Annual CNS Conference, Fredericton, NB, June 1996.

92. G. Nurnberg, Q.M. Lei, "High Temperature Fuel Channel Simulations Using CATHENA", Proceedings of the Fifth International Conference on Simulation Methods in Nuclear Engineering, Montreal, PQ, September 1996.

93. Sabourin, G., H.M. Huynh, "Approaches to Simulate Channel and Fuel Behaviour Using CATHENA and ELOCA", Proceedings of the 17th Annual CNS Conference, Fredericton, NB, June 1996.

94. Q.M. Lei, D.B. Sanderson, R. Dutton, "Modelling Disassembled Fuel Bundles Using CATHENA MOD-3.5a Under LOCA/LOECC Conditions", Proceedings of the 16th Annual CNS Conference, Saskatoon, SK, June 1995.

95. H.S. Lim, K.M. Lee, M.Y. Ohn, N.H. Lee, J.H. Choi, "Validation of CATHENA Against the CS28-1 High Temperature Experiment Under an Impaired Cooling Condition", Ann. Nucl. Energy, Vol. 22, No. 9, pp. 593-600, 1995.

96. Q.M. Lei, D.B. Sanderson, H.E. Rosinger, "High-Temperature Validation of CATHENA Against a 28-Element Thermal-Chemical Experiment", Presented at the CNS Annual Conference, Montreal, PQ, June 1994.

97. T. Nitheanandan, Q.M. Lei, R.G. Moyer, Analysis of Bearing-Pad to Pressure-Tube Contact Heat Transfer", Presented at 18th Annual CNS Simulation Symposium, Pembroke, ON, October 1994.

98. D.J. Oh, S. Girgis, A.C.D Wright, R.W. Holmes, "Predictions of Fuel Channel Behaviour for Large LOCA in CANDU Reactors", Fourth International Conference on Simulation Methods in Nuclear Engineering, Montreal, PQ, June 1993.

99. Q.M. Lei, D.B. Sanderson, H.E. Rosinger, "Pre-Test Simulations of a 28-Element High-Temperature Thermal-Chemical Experiment Using the Computer Codes CATHENA and CHAN-II-WL", Presented at the 13th Annual CNS Conference, Saint John, NB, June 1992.

100. Q.M. Lei, D.B. Sanderson, M.L. Swanson, G.A. Walters, H.E. Rosinger, "Experimental and Theoretical Investigation of Pressure Tube Circumferential Temperature Gradients During Coolant Boil-Off", Presented at the 13th Annual CNS Conference, Saint John, NB, June 1992.

101. J.P. Mallory, M.A. Wright, H. Huynh, "Validation of CATHENA at High-Temperature Conditions Using CHAN Thermal-Chemical Experiment Results", Presented at the 12th Annual CNS Conference, Saskatoon, SK, June 1991.

102. D.B. Sanderson, Q.M. Lei, J.P. Mallory, M. Bayoumi, "A Blind Simulation Study of an Out-Of-Pile High-Temperature Fuel Channel Experiment", Presented at the 16th Annual CNS Nuclear Simulation Symposium, Saint John, NB, August 1991.

103. N.C. Singhal, A.C.D Wright, V.I. Nath, "Comparison of CATHENA and CHAN2A (MOD1) Code Predictions for LOCA/LOECC Conditions", Presented at the 16th Annual CNS Nuclear Simulation Symposium, Saint John, NB, August 1991.

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