

January 24, 2003

Our File: 108US-013210-021-001
Your File: Project No. 722

U.S. Nuclear Regulatory Commission,
Document Control Desk,
Washington, D.C. 20555 U.S.A.
Attention: Ms. B. Sosa
ACR Project Manager

Reference:

1. "Further to the ACR-Pre-Application Plan - Detailed Deliverables and Schedule for Focus Topics", AECL file 108US-01321-021-001, December 18, 2002.

Re: Papers on Fuel Channel Behaviour

In support of the NRC's pre-application review of the ACR, you will find published technical papers related to the detailed technical understanding of fuel channel behaviour in the ACR on the enclosed CDs. The papers (listed in Attachment 1), provide technical background relevant to the successful resolution of pre-application focus topic 1, Class 1 pressure boundary design (Reference 1).

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

Yours sincerely,



Vince J. Langman
ACR Licensing Manager

/Attachments

1. Papers on Fuel Channel Behavior

/Enclosure

1. Two CDs containing Fuel Channel Papers

D070

Attachment 1

Papers on Fuel Channel Behaviour

(Letter from V.J. Langman, "Papers on Fuel Channel Behavior", January 24, 2003)

A.R. Causey, R.A. Holt, N. Christodoulou and E.T.C. Ho

"Irradiation-Enhanced Deformation of Zr-2.5Nb Tubes at High Neutron Fluences" (Causey.pdf)

N. Christodoulou, A.R. Causey, R.A. Holt, C.N. Tome, N. Badie, R.J. Klassen, R. Sauve, C.H. Woo

"Modeling In-Reactor Deformation of Zr-2.5Nb Pressure Tubes in CANDU Power Reactors"

(Christodoulou.pdf)

M. Griffiths, W.G. Davies, A.R. Causey, G.D. Moan, R.A. Holt and S.A. Aldridge

"Viability of In-Reactor Diametral Deformation for Zr-2.5Nb Pressure Tubing" (Griffiths.pdf)

R.A. Holt, A.R. Causey, M.G. Griffiths and E.T.C. Ho

"High Fluence Irradiation Growth of Cold-Worked Zr-2.5Nb" (Holt.pdf)

G.M. McDougall and V.F. Urbanic

"The Influence of Material Variables on Corrosion and Deuterium Uptake of Zr-2.5Nb Alloy During Irradiation" (McDougall.pdf)

G.M. McDougall, V.F. Urbanic and O. Aarrestad

"Studies of Zirconium Alloy Corrosion and Hydrogen Uptake During Irradiation" (McDougall2.pdf)

R.A. Ploc

"The Effect of Minor Alloying Elements on Oxidation and Hydrogen Pickup in Zr-2.5Nb" (Ploc.pdf)

V.F. Urbanic and M. Griffiths

"Microstructural Aspects of Corrosion and Hydrogen Ingress in Zr-2.5Nb" (Urbanic.pdf)

S. Sagat, C.E. Coleman, M. Griffiths and B.J.S. Wilkins

"The Effect of Fluence and Irradiation Temperature on Delayed Hydride Cracking in Zr-2.5Nb"

(Sagat.pdf)

P.H. Davies, D.D. Himbeault, R.S.W. Shewfelt and R.R. Hosbons

"Crack Growth Resistance of Irradiation Zr-2.5Nb Pressure Tube Material at Low Hydrogen Levels"

(Davies.pdf)

E.T.C. Ho, R. Choubey, G.K. Shek, S. Sagat and D.A. Scarth

"Crack Initiation Behaviour in Small Root Radius Zr-2.5Nb Pressure Tube Specimens Under Monotonic and Cyclic Loading Conditions at Ambient Temperature" (Ho.pdf)

A. Celovsky and J. Slade

"Experiences in Examining and Dispositioning Flaws in Zr-2.5Nb Pressure Retaining CANDU Reactor Components" (Celovsky.pdf)

R.R. Hosbons et. al.

"Effect of Long-Term Irradiation on the Fracture Properties of Zr-2.5Nb Pressure Tubes"

(Hosbons.pdf)

S. Sagat, S.Q. Shi & M.P. Puls,

"Crack Initiation Criterion at Notches in Zr-2.5Nb Alloys" (Sagat2.pdf)