

From: "Ion, Robert" <ionr@aecl.ca>
To: "Stephen Bajorek" <SMB4@nrc.gov>
Date: 5/27/04 1:09PM
Subject: RE: Fuel Failure Definition

Hi Steve,

Regarding your question to Massimo on the fuel failure definition, the response is as follows:

Fuel failure or clad failure as used in the presentations does not necessarily represent clad melting because clad failure may occur by any of a number of different mechanisms, as detailed below.

The clad integrity criteria are:

1. No fuel center-line melting.
2. No excessive diametral strain.
3. No significant cracks in the surface oxide.
4. No oxygen embrittlement.
5. No clad failure because of beryllium-braze penetration at bearing pad or spacer pad locations.

Clad melting is, of course, another mechanism that would result in clad failure. Clad melting is only predicted for some fuel elements in the affected channel for a severe flow blockage or feeder stagnation break, both LCDAs. For these events, clad failure by one of the five mechanisms would occur before clad melting. Fuel in the other channels remains intact for these single-channel events. Clad melting is not predicted for DBAs or other LCDAs.

Best regards,
Robert

-----Original Message-----

From: Bonechi, Massimo
Sent: Thursday May 20, 2004 4:08 PM
To: 'Stephen Bajorek'; Bonechi, Massimo
Cc: Langman, Vince; Ion, Robert
Subject: RE: Fuel Failure Definition

Hi Steve!

I got your question and our ACR Licensing will send you the answer shortly.

Massimo

-----Original Message-----

From: Stephen Bajorek [mailto:SMB4@nrc.gov]
Sent: Monday May 17, 2004 11:15 AM
To: bonechim@aecl.ca

Cc: Stephen Bajorek
Subject: Fuel Failure Definition

Massimo,

In your presentation to the USNRC on April 5, you discussed LCDAs including channel blockage events. In several of your slides you talk about "fuel failure". From some of what you have in the handout, it seems that "fuel failure" is when the cladding melts. Is that correct, or what is the definition of "fuel failure" in your event classifications ?

Thanks.

Steve

CC: "Langman, Vince" <langmanv@aecl.ca>, "Belkys Sosa (E-mail)" <BXS2@nrc.gov>