

From: Inverso, Tara
Sent: Tuesday, April 12, 2011 3:47 PM
To: Mark Leyse
Subject: RE: Water Chemistry and Fuel Element Scale in EBWR

Dear Mr. Leyse,

The NRC received your request to place your e-mail and ANL-6136, "Water Chemistry and Fuel Element Scale in EBWR" into ADAMS as publicly available documents.

The NRC is not under any obligation to enter documents provided into ADAMS as a publicly available document. In addition, the ANL document was prepared for the AEC, the predecessor agency of both the NRC and the U.S. Department of Energy (DOE). It is unclear whether this document is part of the NRC's official agency records, or the DOE's records under the Energy Reorganization Act. The NRC is not currently undertaking any regulatory action which relies upon this document; hence, there is no NRC need to determine whether this document is an official agency record of the NRC. Finally, the NRC has not determined (and, under the current circumstances, has no obligation to determine) whether there are any legal restrictions that would prevent the NRC from designating the document as publicly available.

For these reasons, your e-mail request and this response will be placed in ADAMS as publicly available, but the NRC declines to place the ANL document into ADAMS as a publicly available document.

Thank you,
Tara Inverso

From: Mark Leyse [<mailto:markleyse@gmail.com>]
Sent: Monday, April 04, 2011 9:58 PM
To: Inverso, Tara; Dudley, Richard; Clifford, Paul
Cc: Robert H. Leyse; Dave Lochbaum
Subject: Water Chemistry and Fuel Element Scale in EBWR

Dear Ms. Inverso, Mr. Dudley, and Mr. Clifford:

I wanted to send you an ANL paper my father, Robert H. Leyse, coauthored: it discusses the thermal resistance of crud (scale) on the fuel elements of the EBWR. It is ANL-6136, published in 1960. The title is "Water Chemistry and Fuel Element Scale in EBWR."

Among other things the abstract states:

"The last two sections of the report give the results of studies of the heat transfer characteristics of fuel element scale and effects of high-temperature heating on scale removal and fuel element growth. The maximum scale thickness measured was about 0.008 in. Heat transfer calculations based on scale thermal conductivity measurements indicate the possibility of maximum fuel temperatures as high as 1692 F at 100-Mw operation of the core. This temperature is in a range where fuel growth, with resulting

fuel element distortion and damage, is expected. Observed trends that may alleviate damage are the tendency of scale to flake off in high heat transfer areas, and the restraining effect of cladding on growth of fuel. No satisfactory means has been found to descale the fuel plates."

Also, reference 33 is for a report Robert H. Leyse wrote, "Scale on Fuel Elements in EBWR." A test report that was incorporated into "EBWR Operational History," ANL-6229. These reports show that the thermal resistance of crud on fuel elements was reported on as far back as the late 1950's/1960.

Would you please place this e-mail and "Water Chemistry and Fuel Element Scale in EBWR" into Web-Based ADAMS.

Thank you,

Mark Leyse