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Date	Initials	Action
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5/20/08	X H	CNWRA manager/author Informally discusses with NRC Branch Chief or designee on planned scope; this may be done on telephone or via email.
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		NRC Deputy Director or designee High-Level Waste Repository Safety

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1. TITLE (State in full as it appears on the speech, paper, or journal article) Critical Assessment of Corrosion Performance of the Selected Titanium Alloys

2. AUTHOR(S) X. He

3. NAME OF CONFERENCE, LOCATION, AND DATE(s) MRS Fall Meeting, Boston, MA, December 1-5, 2008

4. NAME OF PUBLICATION
N/A

5. NAME AND ADDRESS OF THE PUBLISHER Materials Research Society 506 Keystone Dr. Warrendale, PA 15086-7573	TELEPHONE NUMBER OF THE PUBLISHER (724) 779-3003 (724) 779-8313 (fax)
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6. CONTRACTOR NAME AND COMPLETE MAILING ADDRESS (Include ZIP code) Dr. Xihua He Center for Nuclear Waste Regulatory Analyses Southwest Research Institute 6220 Culebra Road San Antonio, TX 78238	TELEPHONE NUMBER OF THE CONTRACTOR (210) 522-5194
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A. CONTRACTOR AUTHORIZING OFFICIAL (Type or print name) Sitakanta Mohanty, Assistant Director	SIGNATURE <i>Sitakanta Mohanty</i>	DATE 5/28/2008
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B. NRC RESPONSIBLE PROJECT MANAGER (Type or print name)	OFFICE/DIVISION	MAIL STOP
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CRITICAL ASSESSMENT OF THE CORROSION PERFORMANCE OF SELECTED TITANIUM ALLOYS

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ABSTRACT

Titanium alloys are generally selected to be used in severe environments where high corrosion-resistant materials are required. The high corrosion resistance of these alloys is attributed to their passive oxide film. However, their corrosion resistance vary significantly with the exposure environment and the alloying element. This paper will provide a critical assessment based on literature data of the general, localized, and hydrogen embrittlement corrosion of several titanium alloys including Titanium Grade 2, Grade 7, Grade 12, Grade 28, and Grade 29.