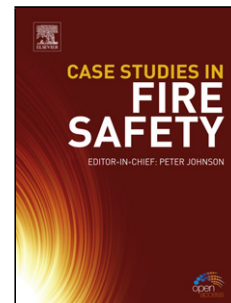


Accepted Manuscript

Title: Stress Corrosion Cracking in the Heat Affected Zone of a Stainless Steel 308L-316L Weld Joint in Primary Water

Author: Lijin Dong Qunjia Peng En-Hou Han Wei Ke Lei Wang



PII: S0010-938X(16)30073-7
DOI: <http://dx.doi.org/doi:10.1016/j.corsci.2016.02.030>
Reference: CS 6667

To appear in:

Received date: 4-9-2015
Revised date: 19-12-2015
Accepted date: 15-2-2016

Please cite this article as: Lijin Dong, Qunjia Peng, En-Hou Han, Wei Ke, Lei Wang, Stress Corrosion Cracking in the Heat Affected Zone of a Stainless Steel 308L-316L Weld Joint in Primary Water, Corrosion Science <http://dx.doi.org/10.1016/j.corsci.2016.02.030>

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

Stress Corrosion Cracking in the Heat Affected Zone of a Stainless Steel 308L-316L Weld Joint in Primary Water

Lijin Dong^{a,b}, Qunjia Peng^{a,*}, En-Hou Han^a, Wei Ke^a, Lei Wang^b

^a Key Laboratory of Nuclear Materials and Safety Assessment, Institute of Metal Research, Chinese Academy of Sciences, Shenyang City 110016, China

^b Key Laboratory for Anisotropy and Texture of Materials (Ministry of Education), Northeastern University, Shenyang City 110819, China

* Corresponding author. Tel.: +86 24 2384 1676; Fax: +86 24 2389 4149. E-mail address: qunjiapeng@imr.ac.cn (Q.J. Peng)

Highlights

- Studied stress corrosion cracking (SCC) in a stainless steel 308L-316L weld joint.
- SCC growth in the heat affected zone (HAZ) affected by chemistry of the primary water.
- SCC grew in the HAZ in off-normal water chemistry with dissolved oxygen (DO).
- No SCC growth in the HAZ in normal water chemistry with dissolved hydrogen.
- Low SCC growth rate in the HAZ likely relates to the low residual strain level.
- SCC in the HAZ in primary water with DO follows the slip-oxidation mechanism.

ABSTRACT

Stress corrosion cracking (SCC) in the heat affected zone (HAZ) of a stainless steel 308L-316L weld joint in primary water of pressurized water reactor was investigated. Stress corrosion crack growth in the HAZ was observed in off-normal primary water chemistry with dissolved oxygen, but not in normal primary water chemistry with dissolved hydrogen. This suggests that it is unlikely a stress corrosion crack propagating in the HAZ could reach the fusion

Download English Version:

<https://daneshyari.com/en/article/7894509>

Download Persian Version:

<https://daneshyari.com/article/7894509>

[Daneshyari.com](https://daneshyari.com)