United States Nuclear Regulatory Commission Official Hearing Exhibit
In the Matter of: Entergy Nuclear Operations, Inc.
(Indian Point Nuclear Generating Units 2 and 3)
ASLBP #: 07-858-03-LR-BD01
Docket #: 05000247 | 05000286
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Withdrawn:
Rejected:
Stricken:
Other:

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Submitted: December 22, 2011

From: ALLISON Kenneth R <Kenneth.Allison@areva.com>
Sent: Friday, December 8, 2006 9:16 AM
To: STUARD William L <William.Stuard@areva.com>
Subject: FW: Section XI--Cracking
Attach: Section XI-Standards.pdf

I think you have this already.....

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From: ESQUILLO Virgilio M
Sent: Wednesday, August 30, 2006 9:33 AM
To: STUARD William L; WARREN Mark L; NAUGLE Carole L; ALLISON Kenneth R
Subject: FW: Section XI--Cracking

Words of Wisdom from Master Yoda to Master Quigon-Jinn

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Subject: Section XI--Cracking

Ron,

The question that continues to surface over and over is the relationship between cracking, ASME Section XI, and

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fatigue (ASME III). I hope the following helps to clarify our (AREVA NP) position on this since it is apparent that most of industry and many of the NRC license renewal auditors are confused by this issue.

- Section XI assumes that nuclear components may contain material and fabrication flaws that were below the detection methods employed at the time of construction or below the acceptance standards used at the time of construction. (See attached excerpt from EPRI-NP-1406-SR)
- Section XI assumes that these flaws may grow over time due to loadings imposed on the component during the service lifetime (See attachment, Page B-1).
- Section XI contains Examination Requirements for various components to detect growth of these flaws over the service life of the component. Specifically, Section XI requires NDE of parts as defined by Examination Categories B-A through B-Q in Table IWB 2500-1
- The acceptance standards for the examination requirements in ASME Section XI are contained in the attached EPRI document and other ASME position papers. Flaws that exceed these acceptance standards are classified as defects and may be dispositioned by (1) repair, (2) replacement, or (3) analytical evaluation.
- It is inconceivable to me how anyone could claim that growth of these flaws due to service loadings is not an aging effect requiring management since growth of these flaws is the bases for ASME Section XI volumetric and surface examinations.
- For B&W-designed plants, ASME Section XI inspections have identified flaws in nearly every B&W-supplied component that have required analytical evaluation to justify continued operation. Locations where defects have been found all have usage factors significantly less than 1.0.

Confusion with ASME III-Fatigue TLAA

- ASME III includes requirements for primary stress, primary plus secondary stress, peak stress, and a fatigue evaluation for assurance of the integrity of the component for its design life.
- Fatigue usage must be less than 1.0 and is based on specified design loadings defined in the Component Design Specification. Plants are all required to monitor design transient occurrences to ensure fatigue design basis is maintained.
- Fatigue usage is a TLAA since it is a calculation based on expected design transients over 40 years.
- In some cases Examination Categories in Section XI may require that inspections be performed at locations with high usage (B-J, CUF> 0.4), and it appears that Section III design rules require application of stress indices and fatigue strength reduction factors to locations that require inspection by ASME XI (welded joints).

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