


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
	Exhibit #: RIV000045-00-BD01
	Admitted: 10/15/2012
	Rejected:
	Identified: 10/15/2012
	Withdrawn:
	Stricken:
	Other:

RIV000045

Date Submitted: December 22, 2011



OMB No.: 3150-0011  
NRCB 88-08, Supplement 1

UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
OFFICE OF NUCLEAR REACTOR REGULATION  
WASHINGTON, D. C. 20555

June 24, 1988

NRC BULLETIN NO. 88-08, SUPPLEMENT 1: THERMAL STRESSES IN PIPING CONNECTED TO REACTOR COOLANT SYSTEMS

Addressees:

All holders of operating licenses or construction permits for light-water-cooled nuclear power reactors.

Purpose:

The purpose of this supplement is to 1) provide preliminary information to addressees about an event at Tihange 1 that appears to be similar to the Farley 2 event and 2) emphasize the need for sufficient examinations of unisolable piping connected to the reactor coolant system (RCS) to assure that there are no rejectable crack or flaw indications. No new requirements are included in this supplement.

Description of Circumstances:

Tihange 1 is an 870 MWe, Westinghouse-type, 3-loop, pressurized-water reactor located at Tihange, Belgium. On June 18, 1988, while the reactor was operating, a sudden leak occurred in a short, unisolable section of emergency core cooling system (ECCS) piping that is connected to the hot leg of loop 1 of the RCS. The operator noted increases in radioactivity and moisture within containment and a decrease of water level in the volume control tank. The leak rate was 6 gpm, and the source of leakage was a crack extending through the wall of the piping. The location of the crack and its orientation are shown in Figure 1.

The crack, which is in the base metal of the elbow wall and not in the weld or heat-affected zone, is 3.5 inches long on the inside surface of the elbow and 1.6 inches long on the outside surface. A crack indication also exists in the spool connecting the elbow to the nozzle in the RCS hot leg. That indication is in the heat-affected zone at the weld connecting the spool to the elbow. The indication is circumferential, extends 3.9 inches on the inner surface of the spool, and is 100 mils deep. Two smaller indications exist in the vicinity of the weld connecting the elbow to the check valve.

Farley 2 experienced one crack in a short, unisolable section of ECCS piping connected to an RCS cold leg as described in Information Notice 88-01, "Safety Injection Pipe Failure," and Bulletin 88-08. That crack, which leaked at 0.7 gpm or less, was in the heat-affected zone of the upstream elbow weld. The crack developed slowly rather than suddenly as at Tihange 1.

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#### Actions Requested:

Although the actions requested in NRC Bulletin 88-08 are unchanged, it should be noted that examinations of high stress locations would include the base metal, as appropriate.

#### Reporting Requirements:

The reporting requirements set forth in NRC Bulletin 88-08 remain unchanged.

If you have any questions regarding this matter, please contact one of the technical contacts listed below or the Regional Administrator of the appropriate NRC regional office.

Charles E. Rossi, Director  
Division of Operational Events Assessment  
Office of Nuclear Reactor Regulation

Technical Contacts: Roger W. Woodruff, NRR  
(301) 492-1180

Pao Kuo, NRR  
(301) 492-0907

#### Attachments:

1. Figure 1 - Tihange 1 Piping
2. List of Recently Issued NRC Bulletins

*Page Last Reviewed/Updated Wednesday, February 16, 2011*

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