



Letter QA-2614

February 21, 2008

U.S. Nuclear Regulatory Commission
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Subject: Notification of a potential defect per 10CFR21
Exide/GNB NCN batteries

The following information is provided on a potential defect in accordance with 10CFR Part 21, paragraph 21.21(b). NLI does not have the capability to perform the evaluation to determine if a defect exists. NLI has supplied safety related batteries to the utilities identified in the attachment to this letter. The utilities that are potentially impacted are notified by copy of this letter.

The basic component that contains a potential defect is Exide/GNB flooded stationary NCN series batteries manufactured from 4/29/2002 to 5/27/2003. A summary of the issue is presented below:

- One utility identified cracks in the battery terminal posts. The utility performed an operability evaluation and determined that the cracks did not impact the operability or seismic qualification of the batteries.
- NLI and GNB performed extensive tests and analyses to determine the cause of the cracking. The following information is provided:
 - The chemical composition, including alloying elements, and grain structure of busbar/post is within GNB specifications.
 - The primary cause of the cracking was determined to be overtightening of the terminal plate to battery post connections during installation of the batteries and during annual maintenance. The following additional information is provided:
 - The cracked terminal posts were identified at the ends of the row of cells, where the terminal plates are bolted to the posts to install the inter-row cables. The GNB instruction manual identifies the required torque at this location as 100 in-lb. The utility had been incorrectly torquing the terminal plate connections to 150 in-lb.
 - Note that the required torque for the intercell connectors is 150 in-lb. This torque is not applicable to the terminal plate connections.

QA-2614
Page 1

IE19

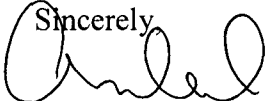


- We have reviewed our manufacturing records for the battery cells with cracks. A contributing factor to the cracking was the process conditions (mold and lead pot temperatures) during the casting of the busbars/posts. The affected timeframe are busbars that were cast from 4/29/2002 to 5/27/2003.
- We have concluded that the cracking would not occur unless both of these conditions are present.

NLI recommends that the following be performed for the batteries identified in the attachment to this letter to determine if this issue impacts other installed batteries:

- Review battery installation and maintenance records and procedures. If the incorrect torque value of greater than 100 in-lb is used for the terminal plate connections, the potential exists for cracked terminal posts. The terminal posts should then be visually inspected. The cracks would be visible using a flashlight and no magnification is required.
- If the correct torque of 100 in-lb is used on the terminal plate connections, no action is necessary. An optional visual inspection can be made to confirm that the posts are not cracked.
- If cracks are found, NLI and Excide/GNB can provide technical support to evaluate the impact.

If you require additional information, please contact me at (817) 284-0077.

Sincerely,


Aron Seiken
President



Attachment I

List of Potentially Impacted Plants

Plant	Purchase Order	Supplied Equipment
STP Nuclear Operating Company	PO 31460	One NCN-27 battery with spare cell (61 cells)
STP Nuclear Operating Company	PO 27029	Two NCN-27 batteries with spare cells (62 cells each)
STP Nuclear Operating Company	PO 15745	One NCN-27 battery with spare cell (61 cells)
Dominion Nuclear Connecticut Millstone Station	PO 03005026	Two NCN-11 batteries with spares (124 cells)

Note: NLI supplied 12 batteries to overseas customers. These customers will be notified by NLI of this potential issue.



Technical Bulletin
Evaluation of Cracked GNB Battery Posts

Issue: STP identified cracks in the terminal posts in some GNB NCN-27 cells. The batteries with the cracked posts were manufactured from July 2002 to January 2003. STP has evaluated the operability of the batteries with the cracked posts and determined that the operability and seismic qualification are not impacted.

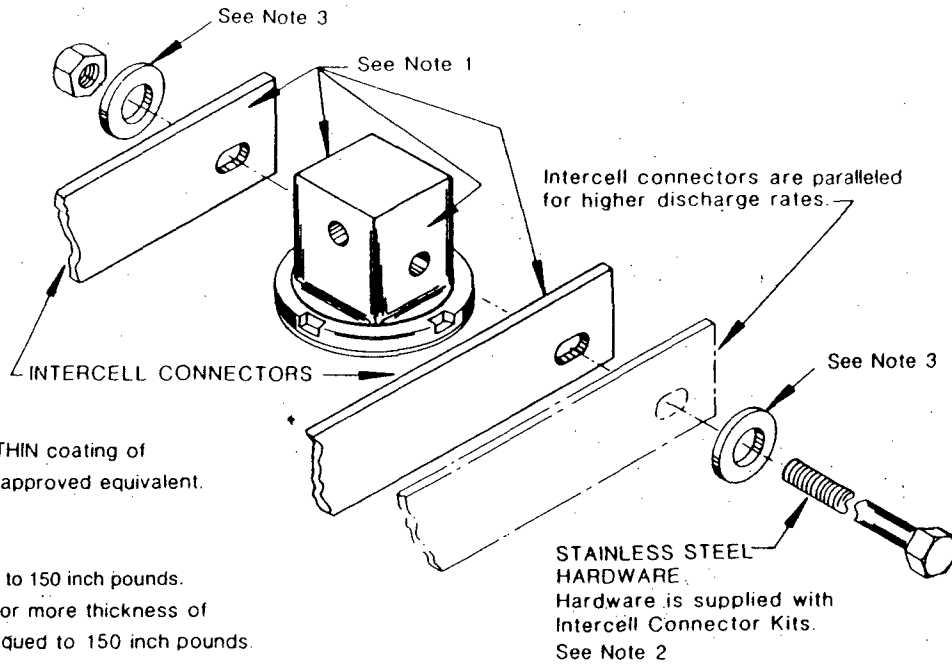
Evaluation: This bulletin addresses potential generic implications of the cracked posts.

- NLI and GNB performed extensive tests and analyses to determine the cause of the cracking. The following information is provided:
 - The chemical composition, including alloying elements, and grain structure of the cracked busbar/post is within GNB specifications.
 - The primary cause of the cracking was determined to be overtorquing of the terminal plate to battery post connections during installation of the batteries and during annual maintenance. The following additional information is provided:
 - The cracked terminal posts were identified at the ends of the row of cells, where the terminal plates are bolted to the posts to install the inter-row cables. The GNB instruction manual identifies the required torque at this location as 100 in-lb. The utility had been incorrectly torquing the terminal plate connections to 150 in-lb.
 - Note that the required torque for the intercell connectors is 150 in-lb. This torque is not applicable to the terminal plate connections.
 - We have reviewed our manufacturing records for the battery cells with cracks. A contributing factor to the cracking was the busbar casting conditions during the casting of the busbars/posts. The affected timeframe are busbars that were cast from 4/29/2002 to 5/27/2003.
- We have concluded that the cracking would not occur unless both of these conditions are present.

Conclusions: The primary cause of the cracking was the excessive torque on the terminal plate connections with the contributing factor of the busbar casting conditions during the timeframe of 4/29/2002 to 5/27/2003. We do not expect that cracking will occur unless both of these conditions are present.

INSTALLATION INFORMATION

Battery Post Connection



Note 1

Coat these surfaces with a THIN coating of No-Oxide Grease or a GNB approved equivalent.

Note 2

Torque all connection bolts:

MQ and PDQ cells are torqued to 150 inch pounds.

M,N & H cells with 1/4 inch or more thickness of intercell connectors are torqued to 150 inch pounds.

M cells with 1/8 inch thickness of intercell connectors are torqued to 100 inch pounds.

Terminal plate connections are torqued at 100 inch pounds.

Note 3

Flat washers must be installed with the rounded (rolled) edge against the Intercell Connector, Backing Plate or Terminal Plate to insure corrosion protection and contact integrity. (See detail A)

Note 4

The installation illustrations on this page are typical of connections made to all battery post and do not represent a specific cell type.

Cable to post

Row Interconnection

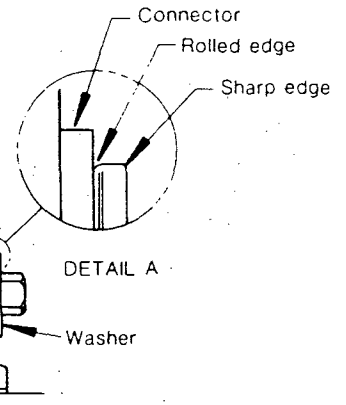
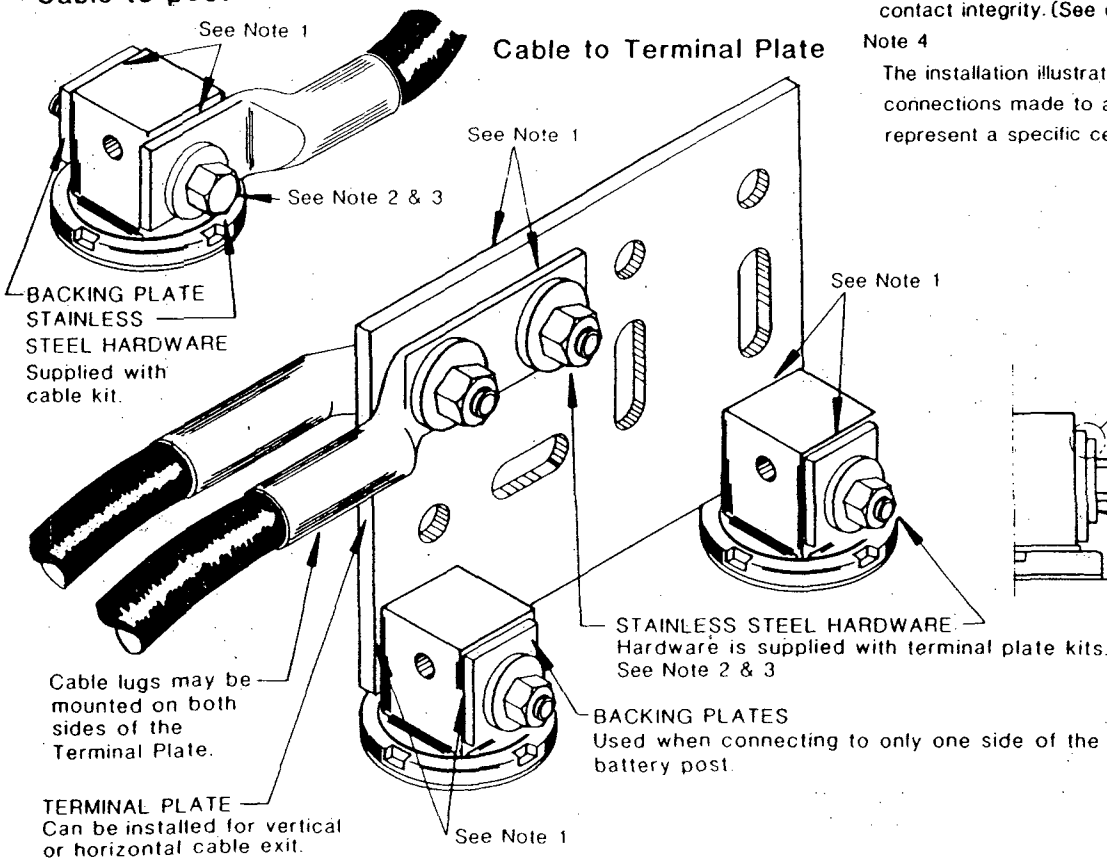


Figure 2A