

Hilti, Inc.
5400 South 122nd East Avenue
Tulsa, OK 74146
(918) 252-6000



October 23, 2009

U.S. Nuclear Regulatory Commission
Document Control Desk
Washington, DC 20555-0001

Re: Notification of a 10 CFR Part 21 relevant discovery for Hilti KB3 anchors

Subject: Potential delivery of nonconforming washers supplied with expansion anchors type Hilti Kwik Bolt KB3 SS316, 1/4" and 3/8" diameters, all lengths, which may meet the definition of a "defect" within 10 CFR Part 21.

Products affected by this notification: Stainless steel Hilti Kwik Bolt 3 type KB3 SS316

- Item # 282565 KB3 SS316 1/4" x 2 1/4"
Lot # 10908397
- Item # 282566 KB3 SS316 1/4" x 3 1/4"
Lot # 10770600
Lot # 10893786
- Item # 282567 KB3 SS316 3/8" x 3"
Lot # 10770517
- Item # 282568 KB3 SS316 3/8" x 3 3/4"
Lot # 10855730
Lot # 10893787
Lot # 10913214
Lot # 10992219

Description of nonconformance:

Hilti was informed by a non-nuclear-related customer that stainless steel Kwik Bolt KB3 SS316 3/8" x 3 3/4" anchors, installed in a waste water treatment facility, showed rust stains on the washers approximately 18 months after installation. Subsequent chemical analysis of provided samples showed these washers were made of Grade SS430Ti stainless steel instead of the specified Grade SS316.

Our internal investigation enabled us to identify all stainless steel washers received for assembly since the stainless steel Grade SS316 KB3 anchor was introduced in 2005. As a result we have identified a specific receipt of nonconforming washers, sizes 1/4" and 3/8", in

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the second half of 2007. We have identified all production lot numbers that were potentially affected, and an earliest potential date of delivery to end-user customers of October 1, 2007.

According to our sales records a total of 10 safety-related orders, to 5 facilities, covering a total quantity of 1300 anchors, have been placed by our nuclear customers, but none of them with a request for lot traceability. Therefore, we cannot rule out the possibility that some anchors of the affected lots were delivered in the above orders. A list of all potentially affected safety-related purchase orders with customer details is attached.

Analysis of potential concern:

Investigation indicates Grade SS430Ti has significantly lower corrosion resistance compared to Grade SS316, and is generally recommended for mildly corrosive environments. In addition, when in contact with the SS316 nut, a galvanic cell may develop, resulting in accelerated deterioration of the washer. Depending on the environment, degradation of the washer may occur over time. While our preliminary analysis indicates there is no immediate safety hazard that would result in failure of an anchorage, the potential eventual deterioration of the washer could have two effects identified to-date: (1) reduction or loss of clamping force; and (2) reduction in the bearing surface area resisting the baseplate pulling over the nut.

Loss of clamping force is not expected to affect performance of the anchor itself. However, applications which rely on clamping force to maintain proper function of the attachment should be further evaluated. Since dynamic loading conditions (the most common potential clamping-critical application) are not one of the recommended applications for this anchor, coupled with the affected anchors being relatively small in diameter, clamping-critical applications would not generally be expected.

As to pullover, our preliminary analysis indicates it does not occur with a baseplate of typical thickness and a clearance hole diameter specified in Hilti technical literature. However, use of a thin baseplate and/or a significantly oversized clearance hole would require further evaluation.

In summary, our preliminary analysis indicates the nonconformance would not, in ordinary and typical application, have any substantial adverse effect on performance of the anchorage. The potential for an adverse effect would be associated with the specific application and corrosive conditions. Because we are not aware of specific conditions of use, we are unable to determine whether the nonconformance could or will result in a substantial safety hazard (i.e., a "defect", as defined in Part 21).

Required action:

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We recommend customers use the attached list of purchase orders, and item and lot numbers, to determine whether there is any evidence the affected product was received. Alternatively, identification of nonconforming washers on previously installed anchors can be accomplished by magnetic check. Installations incorporating nonconforming products should be evaluated to determine the potential effect on the attachment.

If you have any questions or concerns, please contact:

Tom Horan
Quality Manager, Hilti, Inc.
918.872.3606
Tom.horan@hilti.com

Sincerely,

Hilti, Inc.

A handwritten signature in black ink that reads "Marty Schofield". The signature is written in a cursive, flowing style.

Martin Schofield
VP, Product Safety/Liability
706.227.9218
Marty.schofield@hilti.com

Cc: (attachment for below entities contain only purchase information relevant to that entity)

PSE & G Nuclear LLC
Regulatory Assurance
Mail Stop: S05
P.O. Box 236
Hancocks Bridge, NJ 08038

Entergy Operations, Inc.
P.O. Box 31995
Jackson, MS 39286-1995
Attn: Manager, Operating Experience
M-ECH-595

Progress Energy
Site Vice President
Brunswick Nuclear Plant
N.C. Hwy, 87 Box 10429
Southport, NC 28461

Arizona Public Service Co.
P.O. Box 52034, Mail Station 7990
Phoenix, AZ 85072
Attn: Procurement Engineering Section Leader

cc: Progress Energy
Site SUPV-Lic/Reg Prog
Brunswick Nuclear Plant
N.C. Hwy, 87 Box 10429
Southport, NC 28461

Entergy Operations, Inc
P.O. Box 31995
Jackson, MS 39286-1995
Attn: Manager, Operating Experience
M-ECH-595

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Re: Notification of a 10 CFR Part 21 relevant discovery for Hilti KB3 anchors
 Attachment – NRC
 Potentially Affected Safety-Related Purchase Orders
 October 23, 2009

Customer Name	Date of Shipment	Customer P.O. #	Quantity	Item
P S E & G Nuclear	November 1, 2007	4500428782	1 box @ 100/box	# 282565 1/4" x 2-1/4"
P S E & G Nuclear	August 21, 2008	4500475069	2 boxes @ 100/box	# 282565 1/4" x 2-1/4"
Entergy Nuclear / Pilgrim	December 18, 2008	10219662	1 box @ 100/box	# 282565 1/4" x 2-1/4"
Progress Energy / Brunswick	October 24, 2007	346032	1 box @ 100/box	# 282566 1/4" x 3-1/4"
Progress Energy / Brunswick	January 24, 2008	359508	1 box @ 100/box	# 252566 1/4" x 3-1/4"
Progress Energy / Brunswick	February 27, 2008	365403	1 box @ 50/box	# 282568 3/8" x 3-3/4"
Progress Energy / Brunswick	March 13, 2008 March 14, 2008	367162	1 box @ 50/box 3 boxes @ 50/box	# 282568 # 282568 3/8" x 3-3/4"
Progress Energy / Brunswick	March 13, 2009	428764	4 boxes @ 50/box	# 282568 3/8" x 3-3/4"
Arizona Public Service Co.	October 16, 2008	500525800	4 boxes @ 50/box	# 282567 3/8" x 3"
Entergy / Waterford 3	September 24, 2009	10252405	1 box @ 50/box	# 282568 3/8" x 3-3/4"