



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

MAR 9 1987

The Honorable Robert J. Mrazek
United States House of Representatives
Washington, D.C. 20515

Dear Congressman Mrazek:

This responds to your letter dated February 12, 1987 to Chairman Zech pertaining to your constituent's concerns regarding the "misuse of bad nuts and bolts in U.S. nuclear plants."

The Jack Anderson article in Newsday's issue dated January 23, 1987 and referenced in your letter indicates that counterfeit, inferior grade fasteners manufactured in Asia have been used in the nuclear industry. The article also states that quality control problems with bolts have been identified by Nuclear Regulatory Commission (NRC) inspectors at 11 plant sites and summarizes the difficulties of handling and using correct bolts and nuts in specific applications at four sites.

Bolting problems found by the NRC inspectors from 1982 to 1986 at 11 nuclear sites did not involve counterfeit or physically inferior fasteners, but related to loss of traceability back through the manufacturing process. These problems were described in NRC Information Notice No. 86-25 "Traceability and Material Control of Material and Equipment, Particularly Fasteners" which was issued on April 11, 1986 to inform the nuclear industry of the potential problems so that appropriate actions would be taken to prevent similar problems from occurring at their facilities.

A problem with incorrect markings of SAE bolts has been identified by the Industrial Fastener Institute (IFI). Their concern relates to the mismarking and substitution of SAE J429K grade 8.2 bolts for SAE J429K grade 8. Grade 8 bolts are primarily used in automotive applications, but are occasionally used in safety-related applications at nuclear power plants. For this reason, the NRC issued a supplement to Information Notice 86-25 describing the substitution problem and embarked on a testing program.

The NRC Vendor Program Branch of the Office of Inspection and Enforcement (OIE), starting in the summer of 1986, tested and evaluated a random selection of 39 bolts from various nuclear power plants and bolt suppliers and manufacturers. The program was undertaken to verify fastener compliance with applicable material specifications and to evaluate the potential presence of counterfeit fasteners within the nuclear industry. Results indicated that of 21 bolts marked as SAE grade 8, five were actually SAE grade 8.2.

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SAE grade 8.2 bolts have the same mechanical characteristics as SAE grade 8 at temperatures below approximately 620°F. Using a grade 8.2 bolt in lieu of a grade 8 bolt above this temperature might result in stress relaxation (slight elongation) of the grade 8.2 bolt. Stress relaxation would, for example, be expected to result in leakage from a flanged joint. As of this date, we are not aware of any safety-related grade 8 or 8.2 bolts being used in high temperature (above 500°F) applications at nuclear power plants.

The NRC is continuing to test fasteners designated for safety-related applications and will selectively obtain additional bolts from various nuclear power plants and bolt suppliers and manufacturers over the next year.

I am enclosing copies of the Information Notices issued to the industry on this subject. Please feel free to contact my office if additional information is required.

Sincerely,

(Signed) T. A. Robm

Victor Stello, Jr.
Executive Director for Operations

Enclosures: *NONE*

1. Information Notice 86-25
2. Information Notice 86-25,
Supplement 1

DISTRIBUTION: w/o enclosures

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