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SUBJECT: Fulfills commitment expressed in 880111 ltr from GC Sorensen to NRC re discussion of test results in Paragraph 2 of NRC Item 6 & evaluating marking deficiency of two nuts.

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March 31, 1988
G02-88-075

Docket No. 50-397

U. S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, D.C. 20555

Gentlemen:

Subject: NUCLEAR PLANT NO. 2
OPERATING LICENSE NPF-21
WNP-2 FASTENER TESTING PROGRAM,
SUPPLEMENTAL REPORT

Reference: Letter G02-88-007, GC Sorensen (SS) to USNRC;
same subject, dated January 11, 1988

In the reference letter, under NRC Item 6, Discussion of Test Results, Paragraph 2, the Supply System committed to evaluating the marking deficiency of the two nuts identified (Samples N1B and N1D), and to submit the results in a Supplemental Report by March, 1988. The purpose of this letter is to fulfill that commitment.

During sampling in response to IE Bulletin 87-01, the Supply System determined that two 1/2" A325, Type 3 nuts that were procured and green-tagged as heavy hex nuts were actually standard hex nuts. The standard hex nuts are smaller (1/8" across the flats and 1/16" in height) in dimension than the heavy hex nuts. The Supply System has evaluated the possible use of these hex nuts in safety-related applications, and determined that in the unlikely event that one of these nuts has been used there would be no significant impact on joint strength.

The subject nuts were procured in 1983 to replenish stock items rather than for a specific job or design change. This was after completion of the major construction phase at WNP-2.

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The subject nuts were available for use during the start-up phase of WNP-2 and subsequent maintenance/repair activities, including design changes. These activities could include structural steel and hanger designs with the hanger designs encompassing heating and ventilating, electrical and piping systems. The potential for using one of these subject nuts in these cases was limited due to the following reasons:

1) The standard design practice at WNP-2 for structural steel connections was for the contract drawings and/or specs to utilize ASTM A325 bolts with a minimum fastener size of 5/8", and further that the connection be in accordance with the AISC manual (minimum fastener size 3/4").

2) In the overwhelming majority of cases, supports (heating & ventilating, electrical, and piping) are all-welded structures utilizing bolting only at the baseplate connections. The design practice at WNP-2 has been to specify A307 Grade B bolts and nuts in support baseplates.

3) The Type 3 nuts have improved atmospheric corrosion resistance and weathering characteristics. The standard practice during this time frame would have been to specify the standard ASTM A325 Type 1 bolts and nuts for any structural steel or support design rather than special order Type 3.

For the remote case where 1/2" A325 bolts might have been specified, the use of the standard hex nuts do not present any concerns because design practice at WNP-2 required that bolted connections be bearing-type connections and use suitable nuts and hardened washers. The use of hardened washers virtually offsets the smaller dimensions of the standard hex nut versus the heavy hex nut with regard to bearing stress. Additionally, the critical nut loading is thread shear, not induced bearing stress, and substitution of a standard hex nut for a heavy hex nut has no significant impact on joint strength.

Therefore, the Supply System has concluded that the subject nuts were not used during the construction phase of WNP-2, and in the unlikely event that one of the nuts was used subsequently, no critical strength reduction would result.

In addition to the sampling effort that was done in response to IEB 87-02, the Supply System has undertaken to look at all A325 fasteners, regardless of type, for the purpose of comparing the procurement documents to the identification in the MMS system. It is expected that this effort will conclude approximately three months after startup from this refueling outage, and will result in a built-in quality control system that is better prepared to identify this type of problem before it becomes a problem.

Should you have any further questions regarding this matter, please contact Mr. P. L. Powell, Manager, WNP-2 Licensing.

Very truly yours,

RB Samworth

for G. C. Sorensen, Manager
Regulatory Programs

HLA:lw

cc: JB Martin - NRC RV
NS Reynolds - BCP&R
RB Samworth - NRC
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