



Southern California Edison Company

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USNRC-DS

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KENNETH P. BASKIN
VICE PRESIDENT

TELEPHONE
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October 16, 1987

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

Gentlemen:

Subject: Docket Nos. 50-206, 50-361 and 50-362
Out of Specification Condition for
Safety Related Fastener Material
San Onofre Nuclear Generating Station
Units 1, 2 and 3

By letter dated August 26, 1987, the Southern California Edison (SCE) Company received from the NRC the results of a procurement inspection conducted during the period February 2 through March 6, 1987. Samples of safety related fastener materials were obtained by the NRC for subsequent chemical analysis and mechanical testing. Based on the results of the tests, some of these fastener materials were found to be out of specification with the chemical requirements of the American Society of Mechanical Engineers (ASME)/American Society of Testing Materials (ASTM) standard.

The NRC requested that SCE provide a written statement responding to concerns raised in its letter. The purpose of this letter is to provide SCE's response.

The samples obtained were procured from A&G Engineering Co. II, Inc. (A&G Engineering Co.) under a single purchase order. A&G Engineering Co. is the principal supplier of safety related fasteners at San Onofre. The sample contained two bolts (numbered SO-12 and SO-14) and three nuts (numbered SO-11, SO-13, and SO-15) that were tested by the NRC and determined to be out of specification with the appropriate ASTM/ASME standard. A&G Engineering Co. held an ASME Quality System Certificate (#455) at the time the material was supplied. A total of one hundred fifty bolts (seventy five bolts each of two different sizes), and one hundred fifty nuts were purchased.

The bolts were manufactured to the ASME Boiler and Pressure Vessel Code, Section II, 1974 Edition through the Summer of 1974 Addenda, as ASME SA-193 Grade B8M material. The nuts were manufactured to the same Code and Addenda as ASME SA-194 Grade 8. A&G Engineering Co. provided a Certificate of Compliance attesting that the fasteners conformed to the appropriate ASME specification. SCE has performed analyses similar to those used for the NRC's report and concurs that certain chemical requirements are not met. It should be noted that the Edition and Addenda of the Code used by the NRC was not the same as the Edition and Addenda to which the material was manufactured. However, this does not affect the conclusions reached.

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None of the bolts in question have been installed in the plant and SCE has taken appropriate action to preclude their use in safety related applications.

Of the one hundred fifty nuts in question, seventy-five were in storage in the warehouse. SCE has taken action to ensure that these nuts are not used in safety related applications. The remaining seventy-five nuts were issued for use in the plant, however, the specific application can not be determined. As indicated by the NRC's analysis, the nuts meet the chemical requirements for AISI Type 316 stainless steel instead of AISI Type 304 stainless steel. SCE has evaluated the use of nuts made from Type 316 stainless steel in environments at San Onofre specifying Type 304 and has concluded the following:

- 1) Type 316 exhibits greater material strength characteristics than does Type 304.
- 2) Type 316 exhibits greater corrosion resistance than does Type 304.

Therefore, Type 316 stainless steel is an acceptable substitute for Type 304 stainless steel in applications at San Onofre.

The SCE Quality Assurance Organization performed a program audit of A&G Engineering Co. in January of this year. The audit scope included their certification process and supplier qualification program and no deficiencies were identified. However, in view of the present concern, Quality Assurance will conduct a special audit to reassess the effectiveness of A&G Engineering Co.'s certification process and supplier qualification program (with special emphasis on Highland Nut and Bolt Co., Utica, MI). Quality Assurance will issue a report on their findings by December 1, 1987.

In addition, SCE is reviewing the necessity of expanding its current receipt inspection procedures to include additional programs and evaluating the need to modify its audit program. These programs would not only apply to A&G Engineering Co., but to SCE's other suppliers as well. It is expected that SCE will have completed this portion of its investigation by the end of the year.

Should you have any questions or comments please feel free to call me.

Very truly yours,

Kenneth P. Bushi

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