

RG 1.38, Rev. 1

Impact of Proposed Revision 1 to Regulatory Guide 1.38, "Quality Assurance Requirements for Packaging, Shipping, Receiving, Storage, and Handling of Items for Water-Cooled Nuclear Power Plants"

Background

Regulatory Guide 1.38, which endorses ANSI N45.2.1-1972, "Packaging, Shipping, Receiving, Storage, and Handling of Items for Nuclear Power Plants During the Construction Phase," was published in March 1973. The guide endorsed, as an acceptable method, both the requirements (indicated by the verb "shall") and the guidelines (indicated by the verb "should") contained in the subject standard. Some uncertainty has arisen with regard to the NRC staff's intent with such an endorsement. This problem surfaced at an N45-2 Subcommittee meeting when W. M. Morrison pointed out that when a commitment is made to follow a particular regulatory guide and that regulatory guide endorses both the requirements and the recommendations included in a standard, the commitment to follow the regulatory guide, in effect, makes the standard's recommendations mandatory. It became apparent that some companies had not so interpreted the regulatory guides. As a result, a letter from General Electric (W. D. Gilbert) to A. Giambusso, dated February 20, 1975, was received asking for clarification. A copy of this letter is attached. Also attached is the NRC reply to General Electric (R. B. Minogue letter to W. Gilbert dated May 6, 1975). This reply takes into account a discussion on this subject on April 17, 1975, among SD, NRR, and I&E representatives. In the reply, we stated we were undertaking a reexamination of some of the regulatory guides which endorse ANSI standards, particularly in the Quality Assurance area, to determine whether it might

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not be appropriate to qualify our endorsement of at least some of the guidelines since not all have substantive safety importance. Also attached is an excerpt from the minutes of the January 21, 1976, Interoffice Quality Assurance Task Force meeting which outlines the total project. The revision to Regulatory Guide 1.38 is intended to clarify NRC's position on the guidelines included in ANSI N45.2.2-1972 and on other areas of the standard as described below.

Significant Changes with Associated Value Impact Assessment

Change 1: Regulatory Position C.3 of the original guide took exception to Subdivisions A.3.5.2 and A.3.6.3 of ANSI N45.2.2-1972. These subdivisions permit, respectively, tapes containing not more than 0.10% by weight of halogens and sulfur to be used in contact with austenitic stainless steel and nickel alloy surfaces, and desiccants and desiccant bag materials containing not more than 0.25% halogens to be used with austenitic stainless steels. Regulatory Position C.3 stated that when used with austenitic stainless steel and nickel alloy materials, tapes, desiccants, and the desiccant bags should not be compounded from or treated with chemical compounds containing elements that could contribute to intergranular or stress corrosion cracking. The position lists several examples of these compounds and then states where such elements are leachable or where they could be released by breakdown of the compounds under expected environmental conditions (e.g., by radiation). This position could be misleading since it could be construed to mean that tapes, desiccants, or desiccant bags which contain halogens or low melting point metals should not be used under any

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circumstances. To clarify this position, proposed Regulatory Positions C.1.c and C.2.c, which address Subdivisions A.3.5.3 and A.3.5.2 respectively, states that tapes, desiccants, and desiccant bags, when used with austenitic stainless steel and nickel alloy materials, should not be compounded from or created with chemical compounds containing elements in such quantities that harmful concentrations are leachable or they could be released by breakdown of the compounds under expected environmental conditions (e.g., radiation). Such contaminants include fluorides, chlorides, sulfur, lead, zinc, copper, and mercury.

Value: This clarification will clear up any misunderstanding regarding the use of halogen or low-melting point metal containing tapes, desiccants or desiccant bags.

Impact: It's a deraccher in that it could originally be interpreted to rule out more material.

Change 2: Proposed Regulatory Position C.2.d takes exception to Subdivision A.3.5.2(3) of ANSI N45.2.2-1972. This subdivision states that tapes should be brightly colored to preclude their loss into a system. Tapes thus colored may be used on bright, shiny components and may not be noticed. Thus Position C.2.d states that tapes should be colored to contrast with the materials on which they are used in order to make the tapes more noticeable and hence less likely to be left on a component.

Value: This will have a positive value upon plant safety by decreasing the likelihood of leaving unwanted tape on plant components, which could result

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in it becoming lost in the system. It also permits the use of more types of tape, i.e., it doesn't have to be "bright".

Impact: There will be no impact from this change.

Change 3: Proposed Regulatory Position C.2.a takes exception to Subdivision A.3.6.2 of ANSI N45.2.2-1972. This subdivision states that vapor barrier material should be brightly colored to preclude loss within a system. Proposed Regulatory Position C.2.a states that vapor barrier material should be colored to contrast with the materials on which it is used in order to make the vapor barrier material noticeable and less likely to be left on a component. The reasoning for the Change, the Value, and the Impact are the same as to those discussed in Change 2.

Change 4: Proposed Regulatory Position C.2 addresses the "should" and "shall" problem. As discussed in the Background section of this Impact Statement, there is some confusion among the users of Regulatory Guides as to NRC's intent when a guide endorses both the guidelines and requirements of a standard. Regulatory Guide 1.38 is a guide which contains such an endorsement. To clarify the situation regarding Regulatory Guide 1.38, each guideline (indicated by the verb "should") contained in ANSI N45.2.2-1972 has been evaluated as to its importance to safety. Of the eleven guidelines examined, six, which were found to have substantive safety importance, have been included in Regulatory Position C.2. Three of these guidelines have been discussed in Change 1 (proposed Position C.2.c), Change 2 (proposed Position C.2.d), and Change 3 (proposed Position C.2.a). The other three guidelines are discussed below.

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- a. Guideline 1: Section 4.2.3, "Special Shipments," of ANSI N45.2.2-1972 states "Items that exceed established weight or size limitations for railroads or highways, or require special handling should be given additional consideration in the following areas...." These areas include (1) the specification of bracing and tie-down methods to be used with the mode of transportation selected, (2) the placing of "No Dumping" signs on rail shipments, (3) the use of impact recording meters on shipments of heavy or relatively large items incorporating delicate factory installed instrumentation and the proper procedures to be used with these meters, (4) the possible use of "Escorts" when additional surveillance is required, and (5) the certification that the conveyance used is structurally adequate and the investigation of the route to assure safe transit prior to shipment.

These additional considerations for use on special shipments have an importance to safety. Therefore, the guideline should be followed.

Value: This guideline ensures that "special shipment" are given additional consideration during shipping to minimize damage of safety related material or equipment.

Impact: There will be no impact since this guideline was part of the Regulatory Position of Regulatory Guide 1.38.

- b. Guideline 2: Subdivision 4.2.3(3) of ANSI N45.2.2-1972 states "Use of impact recording meters should be specified on shipments of heavy or

relatively large items incorporating delicate factory installed instrumentation." This subdivision specifies that when impact meters are specified that (1) they shall be installed prior to loading, (2) procedures be established to interpret recorded data, (3) notice that impact recording meters are being used is displayed, and (4) special recording meters with operating time limits greater than the expected transit time are used or provisions to service such recording meters are made if the transit time exceeds the operating time of such meters.

The use of impact recording meters on shipments of heavy or relatively large items incorporating delicate factory installed instrumentation is important to safety. Therefore the guideline quoted above should be followed.

Value: This guideline ensures that impact recording meters are used when shipping large items incorporating delicate factory installed instrumentation so that possible damaging shocks are recorded and equipment protected.

Impact: There is no impact since this guideline was part of the Regulatory Position of Regulatory Guide 1.38.

- c. Guideline 3: Subdivision 4.3.6 of ANSI M43.2.2-1972 states "Written instructions covering the location and stacking limits of the crates or boxes on the transport vehicle shall be specified; these should be marked on the container." This guideline concerning the marking of containers with stacking instructions is important to safety and should be followed.

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Value: This guideline will prevent possible damage to safety related equipment or materials due to improper stacking.

Impact: There will be no impact since the guideline was part of the Regulatory Position Regulatory Guide 1.38.

Overall Impact of Change 4: Regulatory Position C.2 recommends the use of guidelines evaluated to be important to safety, leaving the other guidelines of the standard to be used for guidance. The impact of the proposed guide will present a "de-ratchet" to the industry since some guidelines, which previously were part of the Regulatory position, are now considered optional.

Enclosures:

1. W. D. Gilbert letter to A. Giambusso dated February 20, 1975.
2. R. B. Minogue letter to W. D. Gilbert dated May 6, 1975.
3. Minutes of January 21, 1976 meeting of the Interoffice Quality Assurance Task Force.

→ See 15-1.23 for full document.

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