

CCNPP3COLA NPEmails

From: Steckel, James
Sent: Tuesday, November 23, 2010 11:32 AM
To: robert.poche@constellation.com
Cc: wayne.massie@UniStarnuclear.com; Ford, Tanya; Terao, David; CCNPP3COL Resource; Colaccino, Joseph; Reichelt, Eric
Subject: Draft Information on HDPE TR Review
Attachments: Acceptance Review of UniStar HDPE TR Draft Slides.pdf

Rob,

Attached is DRAFT staff acceptance review information pertaining to the UniStar HDPE Topical Report UN-TR-10-001-NP.

Jim Steckel

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Created By: James.Steckel@nrc.gov

Recipients:

"wayne.massie@UniStarnuclear.com" <wayne.massie@UniStarnuclear.com>

Tracking Status: None

"Ford, Tanya" <Tanya.Ford@nrc.gov>

Tracking Status: None

"Terao, David" <David.Terao@nrc.gov>

Tracking Status: None

"CCNPP3COL Resource" <CCNPP3COL.Resource@nrc.gov>

Tracking Status: None

"Colaccino, Joseph" <Joseph.Colaccino@nrc.gov>

Tracking Status: None

"Reichelt, Eric" <Eric.Reichelt@nrc.gov>

Tracking Status: None

"robert.poche@constellation.com" <robert.poche@constellation.com>

Tracking Status: None

Post Office: HQCLSTR02.nrc.gov

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Results of NRC Staff's Acceptance Review of UniStar HDPE Topical Report

December 8, 2010

David Terao, Chief
Component Integrity, Performance and
Testing Branch 1

Office of New Reactors

Background

- In a letter dated September 28, 2010, UniStar submitted its HDPE Topical Report, UN-TR-10-001-NP, under NRC's topical report program.
- The TR provides alternative requirements for the materials selection, design, fabrication, installation, examination, testing, and procurement of HDPE piping material in lieu of meeting requirements in the ASME Code, Section III, Subsections NCA and ND that are incorporated by reference into 10 CFR 50.55a.
- NRC staff performed an acceptance review following the guidance in LIC-500, Rev. 4.

Topical Report Process

- Per LIC-500:
“A TR is a stand-alone report containing technical information about a nuclear power plant safety topic, **which meets the criteria contained in Section 4.1.1**, that can be submitted to the NRC for its review and approval. A TR improves the efficiency of the licensing process by allowing the staff to review a proposed methodology, design, operational requirements, or other safety-related subjects that will be used by multiple licensees following approval by referencing the approved TR. The TR provides the technical basis of a licensing action.”

LIC-500, Section 4.1.1 TR Criteria

- Criterion A: The report should deal with a specific safety-related subject regarding a nuclear power plant that requires a safety evaluation by the NRC staff.

The UniStar topical report meets this criterion because it deals with alternative requirements for the design, materials selection, fabrication, installation, examination and testing of buried piping that can be evaluated independently of a specific license application.

LIC-500, Section 4.1.1 TR Criteria

- Criterion B: The topical report is expected to be used by multiple licensees in a number of requests for licensing actions.

The UniStar topical report meets this criterion because it is expected that all combined license (COL) licensees referencing AREVA's U.S EPR certified plant design will use this topical report. In addition, the UniStar topical report does not preclude other plants, both operating and new reactors, from using this topical report.

LIC-500, Section 4.1.1 TR Criteria

- Criterion C: Consistent with the criteria in LIC-109, “Acceptance Review Procedures,” the topical report contains complete and detailed information on the specific subject presented.

The UniStar topical report does not meet this criterion because the topical report does not contain sufficient technical information to commence with a detailed technical review and enable the staff to reach the necessary finding that the alternative to the regulations provides an acceptable level of quality and safety pursuant to 10 CFR 50.55a(a)(3)(i).

The failure to meet this criterion is discussed in more detail later.

LIC-500, Section 4.1.1 TR Criteria

- Criterion D: NRC approval of the report will increase the efficiency of the review process for applications that reference the report.

The UniStar topical report meets this criterion because NRC approval of the topical report will provide a consistent basis for authorizing an alternative to the regulations by demonstrating an acceptable level of quality and safety that is required to be submitted by each plant referencing the topical report pursuant to 10 CFR 50.55a(a)(3)(i).

Criterion C Issues

- UniStar TR provides alternative “construction” requirements in lieu of ASME Code, Section III, Subsections NCA and ND (2001 Edition/2003 Addenda)
- Once approved, each plant must request NRC authorization to use the TR by demonstrating that the alternative provides an acceptable level of quality and safety pursuant to 10 CFR 50.55a(a)(3)(i).
- Accordingly, the UniStar TR is to be evaluated by the NRC staff to enable specific plants requesting its use to demonstrate that an acceptable level of quality and safety has been provided by the TR.

Criterion C Issues (con't)

- The ASME Code, Section III currently does not contain requirements for use of HDPE material.
- The NRC staff is working with ASME Code to develop rules for HDPE piping.
- UniStar TR provides detailed alternative design, qualification, fabrication, installation, examination and testing methods and acceptance criteria for HDPE piping in lieu of meeting ASME Code rules for metallic piping.
- But, the TR does not explain why or how these methods and acceptance criteria provide an acceptable level of quality and safety.
- Although the TR references many established standards used for non-nuclear plastic pipe applications, the adequacy of those standards has not been demonstrated for the applications intended by the TR in nuclear plants.

What Additional Information is Needed?

- In order to commence its review of the UniStar TR, the NRC staff will need the technical bases (e.g., test data, technical justification) for these alternative methods and acceptance criteria that demonstrate that the alternative methods and criteria provide an acceptable level of quality and safety.