POLICY ISSUE
NOTATION VOTE

April 17, 2012 SECY-12-0060

FOR: The Commissioners

FROM: R. W. Borchardt
Executive Director for Operations

SUBJECT: PROPOSED CHANGES TO THE AMERICAN SOCIETY OF MECHANICAL ENGINEERS BOILER AND PRESSURE VESSEL CODE ASSOCIATED WITH BURIED PIPING

PURPOSE:

This paper requests Commission approval as required by Staff Requirements Memorandum (SRM) for SECY-11-0019, "Senior Management Review of Overall Regulatory Approach to Groundwater Protection," to incorporate by reference American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel (B&PV) Code Section XI changes related to groundwater protection in the 2009 Addenda through the 2011 Addenda into Title 10 of the *Code of Federal Regulations* (10 CFR) Part 50.55a, "Codes and Standards." This paper does not address any new commitments or resource implications.

BACKGROUND:

The Nuclear Regulatory Commission (NRC) incorporates by reference the requirements of the ASME B&PV Code into 10 CFR 50.55a. After the NRC incorporates an edition of the ASME Code into its regulations, licensees may voluntarily update their ASME Section XI inservice inspection code of record to the updated edition. Licensees are required to update their code of record at least once every 10 years.

Until recently,[1] ASME updated its B&PV Code editions every 3 years and issued addenda approximately every year. The NRC periodically reviews new editions and addenda of the ASME B&PV Code and updates 10 CFR 50.55a to incorporate selected changes. The staff is

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[1] ASME recently revised its procedures and intends to revise the B&PV Code every 2 years in the future and no longer plans to issue addenda.

currently processing a rulemaking to revise 10 CFR 50.55a so as to incorporate newer editions and addenda of the ASME Code.

The ongoing rulemaking action to update the edition and addenda of the ASME B&PV Code to the 2009 Addenda through the 2011 Addenda would incorporate some changes to inspections of buried piping that could be related to groundwater protection. These changes are associated with the performance of leakage testing of buried piping as described in the 2011 Addenda to ASME Section XI, Paragraph IWA-5244. The Enclosure shows the changes instituted from the 2010 Edition to the 2011 Addenda of ASME Code Section XI. ASME adopted these changes through a consensus standard development process, which was fully vetted by a wide cross-section of stakeholders.

In the SRM for SECY-11-0019, the Commission stated:

> The Commission approves the SMRG's [Senior Management Review Group's] recommendation for the staff to continue its efforts to work with consensus standards organizations to have certain provisions related to inspecting and maintaining safety related buried piping incorporated into ASME code cases and NACE [National Association of Corrosion Engineers] standards.
>
> If, based on its participation in consensus standard activities the staff determines that revisions to the agency's regulations are necessary to incorporate changes to the ASME codes related to groundwater protection, the staff should seek Commission approval via a notation vote paper.

In accordance with the SRM for SECY-11-0019, the staff is providing this notation vote paper for Commission consideration.

DISCUSSION:

ASME meets periodically to discuss and update its B&PV Code. Through the ASME Code committee consensus process, the nuclear industry and licensees continually revise ASME Code language or develop Code Cases to incorporate new technologies and processes, provide greater operational flexibility, enhance safety, and improve the clarity of ASME Code language. The new editions and addenda typically revise provisions of the ASME Codes to broaden their applicability, add specific elements to current provisions, delete specific provisions, and clarify the provisions. The revisions to the editions and addenda of the ASME Code do not significantly change ASME Code philosophy or approach.

The consensus process ensures that the requirements developed in the ASME Code are fully vetted by a wide variety of stakeholders, including NRC staff.

The ASME B&PV Code is a national, voluntary consensus standard. The National Technology Transfer and Advancement Act of 1995 (Public Law 104-113) requires government agencies to use voluntary consensus standards, where practicable, instead of government-unique standards, unless the use of such a standard is inconsistent with applicable law or is otherwise impractical. The NRC reviews new editions and addenda of the ASME B&PV Code and updates the edition and addenda incorporated by reference in 10 CFR 50.55a approximately every 2 years. Revisions to the agency's regulations are always necessary to incorporate

changes to the ASME Code into regulations; revising 10 CFR 50.55a is the process used to endorse updated editions and addenda of the ASME Code.

The NRC approves and mandates the use of editions and addenda of the ASME Code in 10 CFR 50.55a through the rulemaking process of "incorporation by reference." As such, each provision of the ASME Code—as incorporated by reference into, and mandated by, 10 CFR 50.55a—constitutes a legally binding NRC requirement imposed by rule. Since the ASME Code is a consensus document, technical experts may disagree on what constitutes an acceptable level of safety. The NRC imposes conditions to enhance the provisions in the ASME Code in instances in which the NRC has determined that the provisions do not provide an acceptable level of safety.

The 2011 Addenda to ASME Code Section XI contains changes to the leakage testing requirements of buried components in IWA-5244. These changes basically require that, in addition to the current requirements of performing either a pressure drop test or flow verification test, licensees shall perform a visual examination for leakage "on ground surfaces in the vicinity of the buried components and in areas where leakage might be channeled or accumulated." The staff recognizes that these changes could be interpreted to be related to groundwater protection.

The staff determined that this ASME Code change, if implemented, would not reduce safety and may improve the effectiveness of the leakage testing performed. Accordingly, the staff recommends that the changes be endorsed as-written, without the need to impose any restrictive conditions. If the Commission approves this recommendation, then once the rule is issued, licensees would be able to adopt the revised, more effective ASME Code section. All licensees would be required to adopt the change within 10 years. If the Commission does not approve the staff's recommendation, licensees would not be required to enhance their leakage testing procedures for buried components.

The SRM for SECY-11-0019 requires the staff to seek approval, through a notation vote paper, before revising 10 CFR 50.55a if the revision would endorse an edition of the Code that contained changes affecting groundwater protection. In the case of the current rulemaking, the ASME Code changes that could be related to groundwater protection are minor.

RECOMMENDATIONS:

The NRC staff recommends the Commission take the following action:

> Approve the incorporation by reference of the buried component pressure testing requirements of the 2011 Addenda of ASME Section XI (Enclosure 1).

COORDINATION:

The Office of the General Counsel has reviewed this Commission paper and has no legal objection to its content.

/RA/

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Executive Director
for Operations

Enclosure:
Proposed ASME Section XI Changes

COORDINATION:

The Office of the General Counsel has reviewed this Commission paper and has no legal objection to its content.

/RA/

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Enclosure:
Proposed ASME Section XI Changes

EDATS: NRR-2012-0013

ADAMS Accession No.: ML12082A067
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PROPOSED ASME SECTION XI CHANGES

2011 Edition ASME Section XI IWA-5244 Buried Components

(a) For buried components surrounded by an annulus, the VT-2 visual examination shall consist of an examination for evidence of leakage at each end of the annulus and at low point drains.

(b) For buried components without an annulus, the following examination requirements shall be met.

(1) A VT-2 visual examination shall be performed to identify evidence of leakage on ground surfaces in the vicinity of the buried components and in areas where leakage might be channeled or accumulated. The examination shall be performed after the component has been pressurized to system leakage test pressure for at least 24 hours. Portions of buried components where a VT-2 examination is impractical (e.g., component is buried beneath impermeable material or encased in concrete) are exempt from VT-2 examination.

(2) A test that determines the rate of pressure loss, a test that determines the change in flow between the ends of the buried components, or a test that confirms that flow during operation is not impaired shall be performed. Personnel performing these tests need not be qualified for VT-2 visual examination.

(3) The Owner shall specify criteria for the examinations and tests of (b)(1) and (b)(2).

Summary of changes in the 2011 Edition

In the Code requirement above, the major change from the current Code is the requirement to perform a visual examination for leakage (VT-2) on the ground surfaces in the vicinity of buried components and in areas where leakage might be channeled or accumulated after the component has been pressurized for 24 hours.

Enclosure