

POLICY ISSUE INFORMATION

August 7, 2008

SECY-08-0117

FOR: The Commissioners

FROM: R. W. Borchardt
Executive Director for Operations

SUBJECT: STAFF APPROACH TO VERIFY CLOSURE OF INSPECTIONS, TESTS, ANALYSES, AND ACCEPTANCE CRITERIA AND TO IMPLEMENT TITLE 10 CFR 52.99, "INSPECTION DURING CONSTRUCTION," AND RELATED PORTION OF 10 CFR 52.103(g) ON THE COMMISSION FINDING

PURPOSE:

This information paper provides an update on how the U.S. Nuclear Regulatory Commission (NRC) staff plans to inspect and perform closure verification of inspections, tests, analyses, and acceptance criteria (ITAAC). This paper also describes how the staff plans to implement the main portions of Title 10 of the *Code of Federal Regulations* (10 CFR) Section 52.99, "Inspection during construction," and the related portion of 10 CFR 52.103(g) on the Commission finding. Additionally, this paper discusses several other key ITAAC closure issues. This paper does not address any new commitments or resource implications.

BACKGROUND:

In June 2007, the staff formed an ITAAC closure working group to address ITAAC closure-related issues using a multidisciplinary approach. The Division of Construction Inspection and Operational Programs (DCIP) leads the working group which includes representatives from

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other divisions in the Office of New Reactors (NRO), the Office of Nuclear Security and Incident Response (NSIR), the Office of the General Council (OGC), and NRC Region II. As directed by the staff requirements memorandum for SECY-07-0047, "Staff Approach to Verifying the Closure of Inspections, Tests, Analyses, and Acceptance Criteria Through a Sample-based Inspection program", dated May 16, 2007, the staff has continued to obtain industry and stakeholder input for the new reactor inspection program through the conduct of nine public meetings. On July 11, 2007, the staff briefed the Advisory Committee on Reactor Safeguards (ACRS) on the sampling methodology and statistical thresholds for selecting the ITAAC that will be inspected. In a letter to the Chairman dated July 24, 2007, the ACRS concurred with the staff's approach to the ITAAC closure verification process. This approach for selecting the sample of ITAAC will be used for inspection of construction under combined licenses.

DISCUSSION:

In accordance with 10 CFR Part 52, "Licenses, Certifications, and Approvals for Nuclear Power Plants," applicants submit ITAAC that are necessary and sufficient to provide reasonable assurance that the facility has been constructed and will operate as designed. After issuance of a combined license, a licensee completes the ITAAC contained in the combined license during construction and then submits closure notification letters to the NRC pursuant to 10 CFR 52.99. In parallel, the NRC staff performs sampling inspections and also performs closure verification for all ITAAC. The staff has made progress on key issues related to ITAAC closure as follows:

- (1) Issuance of lessons learned on ITAAC quality and content
- (2) Development of a construction operating experience program
- (3) Development of guidance on how to inspect site-specific ITAAC
- (4) Development of guidance on how to implement 10 CFR 52.99; 10 CFR 52.103(g); and the NRC closure verification process
- (5) Evaluation, planning, and budgeting for the various information technology needs.

Collectively, accomplishments in these five areas demonstrate progress on key issues related to ITAAC closure and the Commission finding pursuant to 10 CFR 52.103(g).

The staff reviewed ITAAC contained in design control documents for the AP1000 and the Advanced Boiling Water Reactor (ABWR) designs and identified lessons learned related to the quality, structure and inspectability of ITAAC. The staff communicated these lessons learned to external stakeholders in Regulatory Issue Summary 2008-05, "Lessons Learned to Improve Inspections, Tests, Analyses, and Acceptance Criteria Submittal," dated February 27, 2008. Additionally, in close coordination with the Office of Nuclear Reactor Regulation, the staff is building a construction experience program for new reactors. The construction experience and generic communication programs are essential to ensure that generic issues that arise domestically and internationally are screened for applicability to new reactors. For example, the staff has initiated a generic communication for three recent construction events, at Okiluoto 3, the Mixed Oxide Fuel Fabrication Facility, and Flamanville-3, involving concrete and reinforcing steel issues. Also, the staff issued Information Notice 2008-04, "Counterfeit Parts Supplied to Nuclear Power Plants," dated April 7, 2008.

Each combined license application (COLA) contains site-specific ITAAC that consist of systems that are outside the scope of the standard design. One example of a site-specific ITAAC is the

ultimate heat sink which may vary based on the source of cooling water for the plant. The staff will review and inspect the site-specific ITAAC using a method similar to the prioritization methodology described in SECY-07-0047. The staff will form expert panels that will select the site-specific ITAAC samples based on safety significance and the ability to inspect. The COLAs also contain ITAAC for emergency preparedness (EP) and physical security. Staff has determined that all physical security and EP ITAAC will be inspected. The staff based this decision on the relatively small number of physical security and EP ITAAC, the qualitative nature of the Security and EP ITAAC, and their high relative importance. In addition to the ITAAC inspections, the staff is planning comprehensive inspections of the operational programs for security and EP. This will include force-on-force security inspections and NRC observations of EP exercises.

Following the 2007 revision to 10 CFR Part 52, the staff developed guidance to implement the revision to 10 CFR 52.99 that requires licensees to notify the NRC of the successful completion of ITAAC. Specifically, 10 CFR 52.99(c) requires that the licensee notifications contain sufficient information to demonstrate that the inspections, tests and analyses are performed and the acceptance criteria are met. The staff and industry have focused efforts on defining the "sufficient information" necessary to describe how the ITAAC have been performed and the basis for determining that the required acceptance criteria have been met. During a comprehensive series of public workshops that featured templates for sample notifications and specific examples, the agency and stakeholders achieved a consensus on the format and level of detail for 10 CFR 52.99 notifications. Enclosure 1 contains an example of a completed ITAAC notification under 10 CFR 52.99(c)(1). Enclosure 2 contains an example of an uncompleted ITAAC notification under 10 CFR 52.99(c)(2). The uncompleted ITAAC notification requires additional information to support a predictive finding that the ITAAC will be completed and that the acceptance criteria will be met. Also, in accordance with 10 CFR 52.99(c)(1), notifications made of uncompleted ITAAC will subsequently require a second notification once the licensee has completed the work and met the prescribed acceptance criteria. On April 2, 2008, the industry submitted Nuclear Energy Institute (NEI) 08-01, "Industry Guideline for the ITAAC Closure Process Under 10 CFR Part 52," for staff review. Once staff comments are resolved, the staff plans to issue a regulatory guide that will endorse this industry guidance document. A draft regulatory guide is planned by the end of 2008.

The staff has begun to develop the internal NRC infrastructure necessary to perform "closure verification" of licensee 10 CFR 52.99 notifications. Section 10 CFR 52.99 requires, among other things, that licensees notify the NRC that the prescribed inspections, tests and analyses have been performed and the associated acceptance criteria are met. The closure verification process includes the receipt and review of the licensee closure letter, verification of NRC inspection results, review of any information that could bear on ITAAC from other sources, and issuance of a *Federal Register* Notice (FRN) of the staff's determination of the successful completion of ITAAC. This process will be led by the DCIP and closely coordinated with NRC Region II, OGC, other NRO divisions, and NSIR. The staff has reviewed ITAAC and grouped similar ITAAC into families to form an ITAAC inspection matrix. As part of the ITAAC closure strategy, the staff plans to ensure that a sufficient number of ITAAC targeted for direct inspection have been inspected prior to closing other ITAAC in the same family that were not directly inspected. This strategy should minimize the likelihood that a closed non-targeted ITAAC will require a revision or retraction of the 10 CFR 52.99 notification and FRN because of an inspection finding related to the targeted ITAAC in that family.

There may be instances where a structure, system, or component (SSC) associated with a completed ITAAC will require maintenance or modification. Through its adoption of NEI 08-01, the industry plans to make a commitment to use enhanced maintenance, quality assurance, and corrective action programs to confirm that the acceptance criteria continue to be met for completed ITAAC. The staff expects the licensees, through the use of these enhanced programs, to evaluate the impact of maintenance and modification activities on previously closed ITAAC. Retractions of the associated FRN will only be required for instances where SSC modification or maintenance resulted in the SSC not meeting the acceptance criteria for a completed ITAAC.

The staff has also developed guidance for the portion of 10 CFR 52.103(g) related to the Commission finding that the combined license (COL) acceptance criteria are met. Enclosure 3 contains a flowchart that describes how ITAAC closure information is utilized in the 10 CFR 52.103(g) finding process. Development of this process was closely coordinated with external stakeholders. An important aspect of the 10 CFR 52.103(g) process is to confirm that the acceptance criteria continue to be met for completed ITAAC that were completed well before the Commission makes the 10 CFR 52.103(g) finding. Based on the ITAAC closure notification and supporting information from the licensee, the completion of all ITAAC closure activities by the NRC staff, the completion of any required hearing by the Commission, and a review of any other pertinent information, the Commission will be in a position to make a finding that all ITAAC acceptance criteria are met.

The staff has also formed a new information technology (IT) working group to assess all construction inspection program development needs. The goal is to develop IT processes and supporting budget requirements that not only facilitate the NRC ITAAC closure strategy, but also support the NRC Region II capability to develop an integrated NRC inspection schedule, based upon all of the individual licensees' site-specific construction schedules. Integrated scheduling is important because it allows resource loading and helps to project future resource and skill needs.

NRC Region II personnel have started the development of detailed inspection strategies for the targeted ITAAC associated with AP1000 and ABWR designs. Staff will assess the inspection resource estimates that result from the detailed planning process against the NRO resource estimates that have been generically developed based upon analysis of inspection needs for the certified design ITAAC. The staff is also estimating the resources needed for engineering support required for the closure of ITAAC with a predominant design/engineering focus. The staff will develop any necessary additional initiatives to assure that the Construction Inspection Program supports an ITAAC inspection, acceptance, and completion process under 10 CFR 52.99. This will support the Commission making a finding as specified in 10 CFR 52.103(g), that a licensee has met all the acceptance criteria of its COL.

COORDINATION:

The Office of the General Counsel has reviewed this package and has no legal objection. The NRC Region II and the Office of Nuclear Security and Incident Response have also reviewed this package and concur.

/RA/

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For Operations

Enclosures:

1. Sample Completed ITAAC Notification
Under 10 CFR 52.99(c) (1)
2. Sample Uncompleted ITAAC Notification
Under 10 CFR 52.99(c) (2)
3. Flowchart and Description of Implementation
of Under 10 CFR 52.99 and 10 CFR 52.103(g)

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