

## Congressional Review Act Summary

AGENCY: U.S. Nuclear Regulatory Commission

TITLE OF ACTION: Implementation of Quality Assurance Criteria and 10 CFR 50.59 for Components Produced Using Advanced Manufacturing Technologies

TYPE OF ACTION: White Paper

LEVEL OF SIGNIFICANCE: Non-Major

AGENCY IDENTIFICATION: 3150

RIN AND/OR DOCKET ID: N/A

DATE OF ISSUANCE: July 2020

STATUTORY OR JUDICIAL DEADLINE: N/A

### DESCRIPTION OF ACTION:

The U.S. Nuclear Regulatory Commission (NRC) is revising its guidance to address the use of advanced manufacturing technologies (AMTs) to develop and install components for nuclear applications. Industry has communicated plans to use AMTs and has identified the 10 CFR 50.59 process as the regulatory path for initial additive manufacturing (AM) components. The first AMT-fabricated component installed in a U.S. nuclear power plant was a thimble plugging device (TPD), which was fabricated using an AM process. The AM TPD was installed in Exelon's Byron Generating Station, Unit 1 during the plant's March 2020 refueling outage. Another licensee is planning to install four AM wing channel fasteners this year.

Regulation 10 CFR 50.59 establishes the conditions under which licensees may make changes to their facilities (e.g., repair or replacement activities using an AMT) as described in the Final Safety Analysis Report (FSAR); make changes to their procedures as described in the FSAR; and conduct tests or experiments not described in the FSAR, without obtaining a license amendment pursuant to 10 CFR 50.90. This regulation in conjunction with other regulatory requirements and processes contribute to determining the safety of a planned change, test, or experiment. These other requirements and processes include elements of procedure review, quality assurance requirements (including design control, procurement, vendor oversight, and document control), technical specifications, post-modification testing, surveillance testing, maintenance activities, in-service inspection, etc., all of which must be adhered to by licensees. The revised guidance clarifies that the regulatory requirements and processes that apply do not differ based on the manufacturing technique used in fabricating the component.

### ANALYSIS:

The NRC expects that there are no quantifiable benefits or costs to the NRC staff or industry as a result of the revision because the guidance only clarifies the applicability of existing requirements and processes to a new manufacturing technique for use in nuclear applications. The industry benefits from the additional flexibility in choosing the manufacturing technique used

in fabricating components used for nuclear applications and from the additional clarity and regulatory certainty the revised guidance provides.

- **Is there an annual effect on the economy of \$100 million or more?**

No, there is not an annual effect on the economy of \$100 million or more.

- **Is there a major increase (typically 10% – 20%) in costs for consumers, individual industries, Federal, State, or local government agencies, or to geographical regions?**

No, there is not a major increase in costs for consumers, individual industries, Federal, State, or local government agencies, or geographical regions.

- **Is there a significant adverse effect on competition, employment, investment, productivity, innovation, or on the ability of U.S.-based enterprises to compete with foreign-based enterprises in domestic and export markets?**

No, use of the document should not affect competition, employment, investment, productivity, innovation, or the ability of U.S.-based enterprises to compete with foreign-based enterprises in domestic and export markets.

#### SUMMARY:

The NRC believes that issuing this document is not a major action under the Congressional Review Act because the document only clarifies the applicability of existing requirements and processes for components fabricated using AMTs and developed and installed for nuclear applications. The guidance is not legally binding and would not result in a net economic impact of more than \$100 million annually.

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