# POLICY ISSUE
## NOTATION VOTE

## RESPONSE SHEET

**TO:** Brooke P. Clark, Secretary

**FROM:** Chairman Hanson

**SUBJECT:** SECY-22-0019: Rulemaking Plan for Revision of Embrittlement and Surveillance Requirements for High-Fluence Plants in Long-Term Operation

**Approved** X **Disapproved** ____ **Abstain** ____ **Not Participating** ____

**COMMENTS:** **Below** ____ **Attached** X **None** ____

Christopher T. Hanson

Digitally signed by Christopher T. Hanson
Date: 2022.10.03 13:59:37 -04'00'

**Signature**
**Christopher T. Hanson**

**Date** **10/03/2022**

**Entered in STARS**
**Yes** X
**No** ____

Chairman Hanson's Comments on SECY-22-0019, "Rulemaking Plan for Revision of Embrittlement and Surveillance Requirements for High-Fluence Plants in Long-Term Operation"

In this paper, the staff seeks Commission approval to initiate a rulemaking to amend the reactor pressure vessel (RPV) embrittlement and surveillance requirements for certain pressurized water reactors that may experience high neutron fluence levels in long-term operation (e.g., beyond 60 years of operation).

The existing embrittlement correlation codified in 10 CFR 50.61 was developed decades ago using data available at the time and assuming an RPV operating life of 40 years, and it exhibits nonconservative characteristics at high neutron fluences. The development of the standard for conducting surveillance tests also did not explicitly consider RPV operating lives beyond 40 years. Further, the current regulatory practice allows licensees to defer surveillance capsule testing intended to confirm embrittlement prediction. The staff determined that these issues would impact confidence in the integrity of the RPV for certain pressurized water reactors in long-term operation.

Based on its thorough assessment, the staff recommends considering requirements only for those reactors that will experience nonconservative embrittlement prediction, while avoiding unnecessary impacts on reactors where these issues are not relevant (Option 2). I agree that the staff's proposal is focused, risk-informed, and will continue to allow the NRC to provide reasonable assurance of adequate protection. I therefore approve the staff's recommended Option 2. The staff should develop a performance-based rule for this proposed rulemaking as appropriate.

The staff and the Advisory Committee on Reactor Safeguards reviewed the current embrittlement method in 10 CFR 50.61 and the associated guidance. Their review indicated that the correlation in ASTM E900-15 based on a more extensive database provides a superior embrittlement prediction for applicable reactors. As a part of this rulemaking, the staff should assess and consider as appropriate, stakeholder interest in a regulatory framework that also permits voluntary adoption of alternative vessel embrittlement approaches for operating and new reactors.