Catawba Unit 2 Proposed Alternative RA-24-0285 Pre-Submittal Meeting

RVCH Nozzle #74 Embedded Flaw Repair

June 26, 2025

Background

- During refueling outage C2R24 (Spring 2021), an embedded flaw repair (EFR) was performed on the Catawba Unit 2 reactor vessel closure head (RVCH) penetration #74 *[NRC verbal authorization per ML21117A129]*
- Duke Energy followed up with proposed alternative RA-21-0144 *[ML22020A283]* as supplemented by RA-22-0180 *[ML22188A236]* for extended use of the Catawba 2 RVCH penetration #74 EFR
- NRC authorized the use of the proposed alternative for the remainder of the fourth ISI interval *[ML22213A253]*
- The Catawba 2 fourth ISI interval is scheduled to end on June 28, 2026; therefore, a new proposed alternative RA-24-0285 is being developed for use of the EFR for the fifth ISI interval

Basis for Proposed NDE Requirements

- On April 25, 2025, the PWR Owners Group (PWROG) submitted WCAP-15987-NP, Supplement 1, Revision 0 (hereafter “the Supplement”) for NRC review and approval in accordance with the NRC topical report program *[ML25115A211 and ML25115A212]*
- The Supplement provides the justification for extending the frequency of EFR dye penetrant (PT) examinations to potentially once every ISI interval (not to exceed 13 years)
- EFR PT examinations require plant personnel to access regions of high radiological dose on the underside of the RVCH during refueling outages, thus extension of PT examination frequency is desired to reduce radiation exposure to plant personnel
- Virtual public meetings between the PWROG and NRC were held on 8/8/24, 9/30/24, and 4/3/25 to discuss the Supplement and receive initial NRC feedback prior to formal submittal

Basis for Proposed NDE Requirements (con't)

- NRC notified PWROG on 5/30/25 of the acceptance review and completeness determination for the Supplement
  - Initial review schedule milestone for transmittal of draft SE to PWROG was stated to be 3/30/2026
- The technical basis provided within the Supplement applies to the Catawba 2 RVCH penetration #74 EFR
- The new proposed alternative for the Catawba 2 RVCH penetration #74 EFR will include the same NDE requirements and frequency as provided in the Supplement

Proposed Alternative RA-24-0285

- Proposed Alternative RA-24-0285 will request relief for the fifth ISI interval at Catawba 2 (March 29, 2026 to March 28, 2038) to use an EFR for RVCH penetration #74
- Proposed Alternative RA-24-0285 will include ISI NDE requirements which align with the PWROG Supplement, including extending the frequency of PT examinations to potentially once every ISI interval (not to exceed 13 years)
- The PWROG supplement will be included as an attachment to proposed alternative RA-24-0285
- The plant-specific technical basis within WCAP-18708-P previously submitted with the proposed alternative for the fourth ISI interval *[attachment to ML22188A236]* determined the Catawba 2 RVCH penetration #74 EFR has a service life of at least 47 years, thus bounds the duration of the fifth ISI interval
- Duke Energy will request approval of the new proposed alternative RA-24-0285 prior to the end of the fourth ISI interval, scheduled to end on June 28, 2026