



**UNITED STATES
NUCLEAR REGULATORY COMMISSION**
WASHINGTON, D.C. 20555-0001

**COMANCHE PEAK NUCLEAR POWER PLANT, UNIT NO. 2 – APPROVAL OF REQUEST
FOR ALTERNATIVE FROM CERTAIN REQUIREMENTS OF 10 CFR 50.55a FOR
OPERATION AND MAINTENANCE OF NUCLEAR POWER PLANTS
(EPID L-2020-LLR-0063, EPID L-2020-LLR-0064, AND EPID L-2020-LLR-0065 [COVID-19])**

LICENSEE INFORMATION

Licensee: Vistra Operations Company LLC

Licensee Address: Mr. Ken J. Peters
Senior Vice President and
Chief Nuclear Officer
Attention: Regulatory Affairs
Vistra Operations Company LLC
Comanche Peak Nuclear Power Plant
6322 North FM 56
PO Box 1002
Glen Rose, TX 76043

Plant Name(s) and Unit(s): Comanche Peak Nuclear Power Plant, Unit 2

Docket No.: 50-446

APPLICATION INFORMATION

Submittal Date: April 9, 2020

Submittal Agencywide Documents Access and Management System (ADAMS) Accession No.: ML20100G562

Supplement Date(s): NA

Supplement ADAMS Accession No.: NA

Licensee Proposed Alternative No. or Identifier: 2A3-3, 2A3-4, and 2A3-5

Applicable Regulation: Title 10 of the *Code of Federal Regulations* (10 CFR),
Section 50.55a(z)(2)

Applicable Code Requirements: 10 CFR 50.55a(g)(6)(ii)

Applicable Code Edition and Addenda: The 2007 Edition through the 2008 Addenda

Brief Description of the Proposed Alternative:

The licensee proposed in Alternatives 2A3-3, 2A3-4, and 2A3-5 to not perform the bare metal visual examinations (VE) of the upper head, the VE of bottom mounted instrumentation (BMI) nozzles, and volumetric examinations of four dissimilar metal nozzle-to-safe end welds and four similar metal safe end-to-pipe welds during the 18th refueling outage (2RF18) in the spring of 2020. The licensee would instead perform the examinations during the 19th refueling outage (2RF19) in the fall of 2021 on the basis that performing these examinations during 2RF18 would result in hardship or unusual difficulty without a compensating increase in the level of quality and safety. At the time of 2RF18, 10 CFR 50.55a(g)(6)(ii), "Augmented ISI program," mandated the requirements of ASME Code Cases N-729-4, "Alternative Examination Requirements for PWR [Pressurized-Water Reactor] Reactor Vessel Upper Heads With Nozzles Having Pressure-Retaining Partial-Penetration Welds Section XI, Division 1," N-722-1, "Additional Examinations for PWR Pressure Retaining Welds in Class 1 Components Fabricated With Alloy 600/82/182 Materials Section XI, Division 1," and N-770-2, "Alternative Examination Requirements and Acceptance Standards for Class 1 PWR Piping and Vessel Nozzle Butt Welds Fabricated With UNS [Unified Numbering System] N06082 or UNS W86182 Weld Filler Material With or Without Application of Listed Mitigation Activities Section XI, Division 1," requiring examinations of the upper head, bottom head, and dissimilar metal welds, respectively. The hardship was caused by potential spread of the Coronavirus Disease 2019 (COVID-19) virus to Comanche Peak Nuclear Power Plant, Unit 2 (Comanche Peak, Unit 2) personnel and the surrounding community. Additionally, the outside contractors used to perform nondestructive examinations at Comanche Peak, Unit 2 were affected by travel restrictions and quarantine requirements.

On April 15, 2020 (ADAMS Accession No. ML20106F235), the U.S. Nuclear Regulatory Commission (NRC) verbally authorized the use of Alternatives 2A3-3, 2A3-4, and 2A3-5 until 2RF19 at Comanche Peak, Unit 2. The NRC staff determined that the proposed alternative is technically justified and provides reasonable assurance of structural integrity of the affected component. This safety evaluation documents the technical basis for the NRC's verbal authorization.

For additional details on the licensee's submittal, please refer to the application dated April 9, 2020.

REGULATORY EVALUATION

Regulatory Basis: 10 CFR 50.55a(z)(2)

Adherence to Section XI of the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code (BPV Code) is mandated by 10 CFR 50.55a(g)(4), "Inservice inspection standards requirement for operating plants," which states, in part, that ASME BPV Code Class 1, 2, and 3 components will meet the requirements, except the design and access provisions and the pre-service examination requirements, set forth in the ASME BPV Code, Section XI.

Section 50.55a(z) of 10 CFR, "Alternative to codes and standards requirements," states, in part, that alternatives to the requirements of 10 CFR 50.55a(b)-(h) may be used, when authorized by the Director, Office of Nuclear Reactor Regulation, if (1) the proposed alternatives would provide an acceptable level of quality and safety or (2) compliance with the specified requirements

would result in hardship or unusual difficulty without a compensating increase in the level of quality and safety.

Pursuant to 10 CFR 50.55a(z)(2), the licensee has submitted the request on the basis that compliance with the specified requirements of 10 CFR 50.55a would result in hardship or unusual difficulty without a compensating increase in the level of quality and safety.

TECHNICAL EVALUATION

This safety evaluation covers three proposed Alternatives 2A3-3, 2A3-4, and 2A3-5, submitted in the letter dated April 9, 2020. The licensee is proposing to defer inspections that are required during refueling outage 2RF18 to refueling outage 2RF19 on the basis that performing these examinations would result in hardship or unusual difficulty without a compensating increase in the level of quality and safety.

Proposed Alternative 2A3-3 covers the bare metal VE of the upper reactor pressure vessel (RPV) head. For the upper head, bare metal inspections are required by ASME Code Case N-729-4. The RPV head at Comanche Peak, Unit 2 is categorized as a "cold" head, meaning that the dissimilar metal partial-penetration welds are exposed to coolant at cold leg temperatures of approximately 560 degrees Fahrenheit (°F) (293 degrees Celsius (°C)). The licensee is proposing to not perform the VE examinations in the upcoming refueling outage, designated 2RF18, and perform the examination in the next refueling outage, 2RF19, which is scheduled for the fall of 2021. As a compensatory measure for not conducting a VE in meeting the requirements of Code Case N-729-4, the licensee will perform a boric acid examination of the head by observing the flange area and inspecting underneath the control rod drive mechanism cooling shroud support ring gap, looking for signs of boric acid leakage.

Proposed Alternative 2A3-4 covers the BMI nozzles. The licensee is requesting to delay the required BMI nozzle VE from refueling outage 2RF18 to refueling outage 2RF19. As a compensatory measure for not conducting the VE in meeting the requirements of Code Case N-722-1, the licensee will perform a VE of the bottom head from the edge of the RPV lower head mirror insulation package by removal of select insulation panels to gain access which will allow examinations for signs of boric acid leakage.

Proposed Alternative 2A3-5 covers the deferral of volumetric examinations of four dissimilar metal nozzle-to-safe end welds. The four subject dissimilar metal nozzle-to-safe end welds are categorized as Examination Item A-2, "Unmitigated butt weld at Hot Leg operating temperature $(-2410) \leq 625$ °F (329 °C)." The four similar metal safe end-to-pipe welds are categorized as Risk Informed (R-A) Item Number R1.20, "Welds Not Subject to a Degradation Mechanism." Code Case N-770-2 requires that the four dissimilar metal nozzle-to-safe end welds be volumetrically examined every 5 years, and the corresponding safe end-to-pipe welds are inspected at the same time. The licensee is requesting to delay the volumetric examinations from refueling outage 2RF18 to refueling outage 2RF19, which would result in the dissimilar metal weld examinations being conducted after 6 years, requiring a 1-year extension. As a compensatory measure for not conducting the volumetric examinations within the required 5 years, the licensee would instead perform a VE of the eight welds.

In addition to the compensatory VE, the licensee will implement the unit's leakage monitoring program in accordance with plant technical specifications, procedures, and administrative controls as described in the letter dated April 9, 2020. The April 9, 2020, letter describes enhanced leakage monitoring with the capability of detecting 0.1 gallon per minute of

unidentified leakage. The ability to monitor effectively for leakage during the upcoming operating cycle will provide for the prompt identification, investigation, and mitigation of leakage to maintain the integrity of the pressure boundary components for which examinations were deferred.

Based on the information provided above, the NRC staff finds that there is reasonable assurance of adequate protection based on:

- The compensatory visual examinations of the upper and lower RPV heads and the piping welds, and
- The enhanced leakage monitoring with the capability of detecting 0.1 gallon per minute of unidentified leakage, and the administrative controls used to detect signs of leakage.

Additionally, the operating experience of the “cold” RPV upper heads, BMI nozzles, and nozzle-to-safe end dissimilar metal welds and safe end-to-pipe welds shows low probability of crack initiation and rapid propagation during the period of deferral

As the ongoing COVID-19 pandemic is of sufficient severity and magnitude to warrant an emergency determination under section 501(b) of the Robert T. Stafford Disaster Relief and Emergency Assistance Act, 42 U.S.C. 5121-5207, and the U.S. Center for Disease Control has determined that COVID-19 poses a serious public health risk, NRC staff finds that the licensee’s hardship justification is acceptable.

CONCLUSION

The NRC staff has determined that complying with the specified requirements described in the licensee’s request referenced above would result in hardship or unusual difficulty without a compensating increase in the level of quality and safety.

The proposed alternatives provide reasonable assurance of the structural integrity of the subject components.

The NRC staff concludes that the licensee has adequately addressed the regulatory requirements set forth in 10 CFR 50.55a(z)(2).

The NRC staff authorizes the use of proposed Alternatives 2A3-3, 2A3-4, and 2A3-5 at Comanche Peak, Unit 2 until the 19th refueling outage currently scheduled for the fall of 2021.

All other ASME BPV Code, Section XI requirements for which an alternative was not specifically requested and approved in this proposed alternative remain applicable, including third-party review by the Authorized Nuclear Inservice Inspector.

Principal Contributor: Stephen Cumblidge

Date: October 5, 2020

Jennifer L. Dixon-Herrity, Chief
Plant Licensing Branch 4
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

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ADAMS Accession No. ML20253A117

***via e-mail**

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DATE	9/22/2020	9/15/2020	8/11/2020
OFFICE	NRR/DORL/LPL4/BC*		
NAME	JDixon-Herrity		
DATE	10/5/2020		

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