

April 11, 2011

MEMORANDUM TO: Docket File

FROM: N. Kalyanam, Project Manager /RA/
Plant Licensing Branch IV
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

SUBJECT: ARKANSAS NUCLEAR ONE, UNIT 1 - VERBAL AUTHORIZATION
OF REQUEST FOR ALTERNATIVE, ANO1-R&R-015 (TAC
NO. ME5924)

By letter dated March 29, 2011 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML110900049), Entergy Operations, Inc. (Entergy, the licensee), requested U.S. Nuclear Regulatory Commission (NRC) approval of a proposed temporary non-Code repair to service water (SW) piping for Arkansas Nuclear One, Unit 1 (ANO-1). The request was submitted in accordance with NRC Generic Letter (GL) 90-05, "Guidance for Performing Temporary Non-Code Repair of [American Society of Mechanical Engineers Boiler and Pressure Vessel Code] ASME Code Class 1, 2, and 3 Piping."

On June 23, 2010, with ANO-1 in operation at 100 percent power, Entergy identified a through-wall leak of approximately 2 - 4 drops per minute in a section of SW system piping. Ultrasonic testing was conducted and the evaluation concluded that the leakage was a result of wall thinning due to localized corrosion on the inside of the pipe. The leak was addressed under GL 90-05. A subsequent re-inspection, with a smaller grid and a 0.2-inch diameter transducer, indicated a change in the data pertaining to the thickness of the flawed area. While the SW system operability was established, the evaluation also concluded that, assuming ongoing corrosion at a rate consistent with the most recent data, operability cannot be assured for the remainder of the operating cycle, which ends in the fall of 2011, and a near-term repair was necessary.

Since ASME Code, Section IWA-4422.1 requires that a defect be removed as part of a repair and since defect removal is not possible with the system in service in this case, Entergy designed a temporary repair, consisting of installing a steel plate (approximately 3 by 4 inches), on the degraded SW line, covering the small pinhole leak. Entergy requested relief from the ASME Code Section IWA-4422.1 requirement.

The NRC staff concludes that the design calculation for the plate thickness, the design drawing, the pre-installation examination, post-installation examination, system leakage test, and inservice monitoring of the repair satisfy the relevant requirements of American National Standards Institute (ANSI) B31.1, "Power Piping"; ASME Code, Sections III and XI; ASME Code Case N-661-1, "Alternative Requirements for Wall Thickness Restoration of Class 2 and 3 Carbon Steel Piping for Raw Water Service, Section XI, Division 1"; and GL 90-05. The licensee also performed the extent of condition examination and found no unacceptable

degradation at five locations. The staff concludes that the licensee has provided sufficient information to support its argument that compliance with the Code requirements and a subsequent plant shutdown to perform an ASME Code repair of the subject degradation would result in hardship or unusual difficulty without a compensating increase in the level of quality and safety.

The NRC staff has determined that the proposed temporary non-Code repair will provide reasonable assurance that the subject SW supply line will maintain its structural integrity until it is permanently repaired during the next refueling outage, currently scheduled to start on October 16, 2011.

Pursuant to paragraph 50.55a(a)(3)(ii) of Title 10 of the *Code of Federal Regulations*, the NRC staff authorizes the use of Relief Request ANO1-R&R-015 for the temporary non-Code repair of the degraded SW supply line to the reactor building cooling coils at ANO-1, as discussed during a conference call with the licensee on April 1, 2011. Relief Request ANO1-R&R-015 is thereby authorized for use up to the next scheduled outage exceeding 30 days, but no later than the next refueling outage, which is scheduled for the fall of 2011.

All other requirements in ASME Code, Section XI, ANSI B31.1, Code Case N-661-1, and GL 90-05 for which relief was not specifically requested and approved in this relief request remain applicable, including third-party review by the Authorized Nuclear Inservice Inspector.

This verbal authorization does not preclude the NRC staff from asking additional clarification questions regarding Relief Request ANO1-R&R-015 while preparing its subsequent written safety evaluation.

The participants in the April 1, 2011, telephone call in which the NRC staff verbally authorized the temporary non-Code repair are identified below.

NRR

M. Markley
T. Lupold
J. Tsao
N. Kalyanam

REGION IV

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ENTERGY

S. Pyle
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D. Torgerson
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M. Markley	J. Clark	S. Pyle	R. Jones
T. Lupold	A. Sanchez	D. Bice	P. Butler
J. Tsao	J. Rotton	W. Greeson	D. Torgerson
N. Kalyanam		D. McKenney	D. Meatheany
		K. Panther	J. Weicks

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