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Docket Nos.: 50-321

NL-16-0421

U. S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, D. C. 20555-0001

Edwin I. Hatch Nuclear Plant – Unit 1
Full Structural Weld Overlays on
Reactor Recirculation and Residual Heat Removal Systems
Nondestructive Examination Results - Spring 2016 Outage (1R27)

Ladies and Gentlemen:

By letter dated December 18, 2015, the Nuclear Regulatory Commission (NRC) approved the use of inservice inspection (ISI) Alternative HNP-ISI-ALT-15-01. This Alternative allowed the installation of full structural weld overlays (FSWOL) on four welds at Edwin I. Hatch Nuclear Plant (HNP) Unit 1 during the spring 2016 refueling outage. Below is the ISI weld identification number for each of the four welds:

- 1B31-1RC-12BR-C-5
- 1B31-1RC-12BR-E-5
- 1E11-1RHR-24A-R-12
- 1E11-1RHR-24A-R-13

The ISI Alternative stated (in part) that Southern Nuclear Operating Company (SNC) “will provide the NRC, within 14 days after the completion of the ultrasonic examination of the weld overlay installations, (1) the examination results of the weld overlays, and (2) a discussion of any repairs to the overlay material and/or base metal and the reason for repair.”

The nondestructive examination (NDE) was completed on March 6, 2016. The attached Table 1 documents the examination results and includes a description of any repairs and the reasons for the repairs. These NDE examination results support the position that the weld overlays are acceptable for service.

The Alternative requires the ISI ultrasonic examination to be repeated in either the 1R28 or the 1R29 outage. This letter satisfies the 14-day examination reporting requirements.

This letter contains no NRC commitments. If you have any questions, please contact Ken McElroy at (205) 992-7369.

Respectfully submitted,



C. R. Pierce
Regulatory Affairs Director

CRP/RMJ

Enclosure: Hatch Unit 1 Weld Overlay Examination Results and Repairs during
the 1R27 Outage

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Edwin I. Hatch Nuclear Plant – Unit 1
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Enclosure

Hatch Unit 1 Weld Overlay Examination Results and Repairs during the 1R27
Outage

Enclosure to NL-16-0421

Hatch Unit 1 Weld Overlay Examination Results and Repairs during the 1R27 Outage

Weld Overlay (WOL) No.	Base Metal PT Results/Repairs	Sacrificial Layer PT Results	Completed WOL PT Results/Repairs	PDI UT Exam Results/Repairs	Post-WOL Repair Exams	Remarks
1B31-1RC-12BR-C-5	NRI	NRI	NRI	The original axially-oriented UT indication first observed during the 1988 outage was not observed during the 2016 (1R27) outage. An embedded reflector in the original weld material was also noted. This indication was acceptable per ASME Section XI, Table IWB-3514-2.	N/A	N/A

NRI – No Recordable Indications

Hatch Unit 1 Weld Overlay Examination Results and Repairs during the 1R27 Outages

Weld Overlay (WOL) No.	Base Metal PT Results/Repairs	Sacrificial Layer PT Results	Completed WOL PT Results/Repairs	PDI UT Exam Results/Repairs	Post-WOL Repair Exams	Remarks
1B31-1RC-12BR-E-5	Two linear PT indications larger than the 1/16-inch criteria per ISI Alternative 15-01 were observed: (1) a 1-1/8-inch linear indication in the weld overlay remnant and (2) a 1/4-inch linear indication in the dissimilar metal weld within 1/8-inch of the P3 ferritic material. Grinding was performed on the indications but it did not reduce the flaw lengths to an acceptable size. These PT indications are aligned azimuthally with the 2006 and 2016 UT indications. Resolution consisted of a combined seal weld repair of shielded metal arc welding (SMAW) on the weld overlay remnant and gas tungsten arc welding (GTAW) on the dissimilar metal weld surface temperbead. PT was performed on 02-21 (after the 48-hour hold) with no recordable indications.	NRI	NRI	The UT examination of the new WOL resulted in six indications recorded. Four fabrication flaws in the 52M weld overlay which had no measurable through-wall and were less than 3-inches in length. Also observed was a fabrication flaw in the original Alloy 182 nozzle buttering. These five indications were acceptable per ASME Section XI, Table IWB-3514-2. The original axially-oriented UT indication first observed during the 1988 outage had advanced to the repaired area but did not go into the 2016 weld overlay material. The UT data for weld 1B31-1RC-12BR-E-5 has been shared with EPRI NDE Center personnel for further evaluation and review to support a future potential industry recommendation.	N/A	N/A

NRI – No Recordable Indications

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Hatch Unit 1 Weld Overlay Examination Results and Repairs during the 1R27 Outages

Weld Overlay (WOL) No.	Base Metal PT Results/Repairs	Sacrificial Layer PT Results	Completed WOL PT Results/Repairs	PDI UT Exam Results/Repairs	Post-WOL Repair Exams	Remarks
1E11-1RHR-24A-R-12-13 (New WOL covers both welds 12 and 13)	NRI	NRI	NRI	The original axially-oriented UT indication on Weld 13 which was first observed during the 1984 outage was not observed during the 2016 (1R27) outage. UT fabrication flaws were noted in the original weld 12 (Valve to Pipe) and the valve body OD clad. These indications were acceptable per ASME Section XI, Table IWB-3514-2.	N/A	N/A

NRI – No Recordable Indications