



Northern States Power Company

Monticello Nuclear Generating Plant
2807 West Hwy 75
Monticello, Minnesota 55362-9637

December 27, 1994

10 CFR Part 2
Section 2.201

U. S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, DC 20555

MONTICELLO NUCLEAR GENERATING PLANT
Docket No. 50-263 License No. DPR-22

Reply to Notice of Violation Contained
in NRC Inspection Report No. 50-263/94011

Pursuant to the provisions of 10 CFR Part 2, Section 2.201, our reply to the notice of violation contained in your letter of November 28, 1994 is provided as Attachment A.

This submittal does not contain any new commitments to the NRC nor does it modify any existing NRC commitments. Please contact Marv Engen, Sr. Licensing Engineer, at (612) 295-1291 if you have any questions or wish further information concerning this matter.

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Plant Manager
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c: Regional Administrator, Region III, NRC
Senior Resident Inspector, Monticello Site, NRC
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Attachment: A - Reply to Notice of Violation

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Attachment A

REPLY TO NOTICE OF VIOLATION

Violation No. 1:

Technical Specification 6.5.C.3 requires, in part, that detailed written procedures, including applicable check-off lists and instructions, covering maintenance and test procedures for preventive or corrective maintenance of plant equipment and systems that could have an effect on nuclear safety. Work Request Authorization 94-05322 provided instructions for the repair of tack welds on adjusting screws located on the reactor vessel jet pumps.

- a. *Attachment 2 to WRA 94-05322 was GE instruction FDI 0382-51847. Step 4.2 of that instruction required that a functional test of the welding procedure and equipment be performed with the welding fixture submerged in water. This step also required the completion of three acceptable test tack welds in accordance with the qualified welding procedure specification and that these welds be broken by a torque test (25 ft-lb).*

Contrary to the above, on October 10, 1994, the weld machine and procedure for welding had not been functionally tested prior to use on jet pump set screw tack welds.

- b. *Attachment 3 to WRA 94-05322, GE procedure 25A5589 rev. 0, "Underwater Tack Welding," required in step 3.4.1 that all production welds shall be performed in accordance with the qualified weld procedure. Additionally the step required that no welding shall be performed using parameters outside the range of the qualified essential variable without requalification of the procedure.*

Contrary to the above, on October 10, 1994, welds were completed with the welding machines' essential variables set to values outside of their qualified ranges.

- c. *Attachment 3 to WRA 94-05322, GE procedure 25A5589 rev. 0, "Underwater Tack Welding," required in step 4.b that welding settings, including current, voltage, time, and downslope time as a minimum be recorded and maintained.*

Contrary to the above, on October 10, 1994, welding settings used to make the welds were not recorded for seven welds.

This is a Severity Level IV Violation (Supplement I).

NSP Response:

NSP acknowledges the above violation.

Reason for the Violation:

Tack welding of jet pump adjusting screws was an emergent 1994 refueling outage work activity. The corrective action taken to restore the integrity of the tack welds employed autogenous welds. This process had not been previously utilized for this application. To assure successful resolution of the jet pump adjusting screw tack weld cracks, a Project Team was formed. This team was comprised of General Electric Company (GE) welding specialists/engineers, NSP Nuclear Quality Department personnel, and NSP engineers. GE supplied the equipment, task supervision, and procedures for the job. NSP supplied quality assurance and quality control (QA/QC) personnel to support the job activities, as well as welding engineer expertise. Monticello plant engineering provided an overall work control procedure, project oversight, and work activity coordination.

Initial weld repairs performed in accordance with the approved procedures were successful; however, process difficulties were encountered which prevented further tack welds from being completed successfully. To correct this problem, the GE supplied welding power supply unit (with digital/programmable control) was replaced with a power supply unit with analog/manual control. This replacement provided the capability to make allowable adjustments to welding variables in order to attain acceptable tack weld results.

This equipment change resulted in the following recognized and unrecognized process impacts:

1. GE and NSP personnel involved in the tack weld repair recognized and considered the issue of satisfying functional testing with the replacement power supply unit. Discussions were held between Monticello plant engineering, NSP welding engineers, GE personnel on-site, and GE welding engineers off-site to resolve the issue prior to performing production welds. These discussions confirmed that changing power supplies did not impact

upon the intent of the work control procedure and would not invalidate the already completed procedure and equipment functional testing. It is recognized that the resolution of this issue should have been documented with the work package in order to provide the necessary clarification of the procedure intent.

2. The replacement power supply unit provided the capability to modify the current downslope setting. To enhance the performance of the tack weld process, NSP and GE personnel identified that the current downslope setting could be modified to reduce the size of the pore at the end of the weld during formation of the weld puddle, thereby allowing the formation of a better weld. Discussions were held between Monticello plant engineering, NSP welding engineers, GE personnel on-site, and GE welding engineers off-site prior to performance of production welds to confirm the acceptability of this process enhancement. It was confirmed that this parameter is not specified as an essential variable by ASME Section IX and that it should not have been specified as an essential variable in the GE supplied Weld Procedure Specification. This process change was technically resolved as being acceptable. The change required the processing of a procedure change; however, one was not processed.
3. The original automatic welding machine power supply unit automatically provided an edit of weld settings each time the weld sequence was initialized; however, the replacement power supply unit did not have this automatic record feature. The impact of this process change was not initially recognized and as a result adequate manual documentation provisions were not incorporated into the procedure. The manual settings required by the replacement power supply were being verified by an individual qualified to operate the welding machine and were observed by a Quality Control Inspector prior to each weld being made to ensure correct and proper settings.

The cause of this violation was a miscommunication concerning the responsibilities to be fulfilled by the individual assigned project coordinator duties for the jet pump adjusting screw tack weld job. As a result, ownership for the controlling procedures was not understood by the project coordinator; and thus, there was a failure to revise the work documents as necessary.

Corrective Action Taken and Results Achieved:

1. Proof testing of the automatic welding machine utilizing the replacement power supply unit was performed prior to and subsequent to the performance of production welds. This proof testing provided added assurance of acceptable weld quality.
2. A GE Field Disposition Deviation Report (FDDR) and a Monticello Nonconformance Report were issued to address the non-compliance with the current down slope time specified by the procedure. These documents dispositioned the welds as acceptable to be used as is. This was confirmed by visual inspection of the welds.
3. Weld machine settings not initially recorded were reconstructed and have been documented with the procedure records.
4. Management's expectations concerning ownership for task performance, procedure adherence, the importance of recognizing changing job conditions and processing the necessary documentation/temporary procedure change were communicated to the project coordinator for the jet pump adjusting screw tack weld job.

Corrective Action to be Taken to Avoid Further Violation

No further corrective action is required.

Date When Full Compliance Will Be Achieved

Full compliance has been achieved.

Violation No. 2:

10 CFR 20.1501 requires that each licensee make or cause to be made surveys that may necessary for the licensee to comply with the regulations in Part 20 and that are reasonable under the circumstances to evaluate the extent of radiation levels, concentrations or quantities of radioactive materials, and the potential radiological hazards that could be present.

Pursuant to 10 CFR 20.1003, survey means an evaluation of the radiological conditions and potential hazards incident to the production, use, transfer, release, disposal, or presence of radioactive material or other sources of radiation.

Contrary to the above:

- a. During the September 1994 outboard main steam isolation valve (MSIV) replacement, the licensee did not make adequate surveys to assure compliance with 10 CFR 20.1201 which limits occupational radiation exposure to an adult. Specifically, the licensee failed to identify and evaluate the alpha radioactivity component in the radiological planning for the evolution.*
- b. During the September 1994 inboard MSIV replacement, the licensee did not make surveys to assure compliance with 10 CFR 20.1201 which limits occupational radiation exposure to an adult. Specifically, the licensee failed to provide an adequate airborne radioactivity evaluation prior to allowing entrance into the drywell MSIV area without respiratory protection.*

This is a Severity Level IV violation (Supplement IV).

NSP Response:

NSP acknowledges the above violation.

Reason for the Violation

The Radiation Protection Plan (RPP) requires that "surveys to evaluate the extent of radiation levels, the concentration or quantity of radioactive material,

and potential radiological hazards that could be present SHALL be made as may be necessary to comply with ... 10CFR20, and are reasonable under the circumstances."

The cause for the first example of this violation (failure to identify and evaluate the alpha radioactivity component), was an inadequate controlling process. RPP implementing procedures did not anticipate the large concentrations of alpha emitting radionuclides (1000 to 100,000 times higher than normal), relative to beta emitters, which were discovered during work on the MSIVs. Over more than 20 years of operation prior to this discovery, transuranic isotopes, when detected, had only accounted for small fractions (i.e., 0.001 to 0.05 percent) of the total activity, and beta emitting isotopes were the limiting internal hazard. Because the alpha hazard was not considered a reasonable probability, the procedure for analysis of contamination samples required high activity samples to be counted with a g-m detector (to prevent contamination of the low background alpha-beta counter) and did not include a method of alpha analysis for those samples.

The cause for the second example (failure to provide adequate airborne radioactivity evaluation), was that the Radiation Protection Coordinator (RPC) exercised personal judgment and made a non-conservative decision when he allowed entry to the drywell MSIV area without evaluating the airborne hazard, and with a dust mask for respiratory protection. The on-going work was thought to be limited to grinding on new weld material, however, the worker also did some grinding on old metal surfaces, which generated airborne levels much higher than expected. Based on the results of air samples taken during earlier entries which showed low airborne activity, and because it was believed that any low-level airborne created by the grinding would quickly be removed by the ventilating unit, the RPC assumed that a dust mask would be adequate protection. Although it is probable that the airborne material was cleared by the time the entry was made, an air sample was not drawn to show that this was indeed the case.

Corrective Action Taken and Results Achieved

1. Action levels for alpha contamination on smear samples from contaminated areas were issued. Guidance was also issued to obtain Am-241 data when opening primary systems.

2. To ensure that an unidentified alpha hazard was not present in other work areas, special surveys were performed on open systems where there was a possible concern. In addition, previous survey data was reviewed to ensure that nothing was missed. In both cases the result was negative. No other indications of alpha contamination were found.
3. The importance of making conservative decisions was communicated to the Radiation Protection personnel.

Corrective Action to be Taken to Avoid Further Violations

No further corrective action is required.

Date when Full Compliance will be Achieved

Full compliance has been achieved.