



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO AMENDMENT NO. 140 TO FACILITY OPERATING LICENSE NO. DPR-59
POWER AUTHORITY OF THE STATE OF NEW YORK
JAMES A. FITZPATRICK NUCLEAR POWER PLANT
DOCKET NO. 50-333

1.0 INTRODUCTION

By letter dated September 28, 1989, the Power Authority of the State of New York (PASNY or the licensee), the licensee for the James A. FitzPatrick Nuclear Power Plant, requested an emergency Technical Specification (TS) amendment in order to delete the requirement to perform a Type A, Type B, or Type C Leak Rate Test following repair of Weld No. 10-14-884A on the "B" Core Spray System test return pipe (10"-W23-152-9B) to the primary containment pressure suppression chamber.

2. DISCUSSION

An in-service inspection conducted during the current mid-cycle maintenance outage revealed the presence of a slag inclusion within Weld No. 10-14-884A on the "B" Core Spray system test return line (10"-W23-152-9B), which has been repaired in accordance with the requirements of ASME Section XI and ANSI B-31.1-1967 (the construction code for FitzPatrick). The weld is located on a section of piping between the Core Spray test return valve (14MOV-26B) and the primary containment pressure suppression chamber shell and is part of the primary containment pressure boundary.

Technical Specification Section 4.7.A.2.f and 10 CFR Part 50, Appendix J, Section IV.A, require that following replacement of a component which is part of the primary containment boundary, either a Type A, Type B, or Type C Leak Rate Test, as applicable for the area affected, must be conducted and the appropriate acceptance criteria met. Although this type of repair to the containment pressure boundary is not specifically discussed in Appendix J to 10 CFR Part 50, the licensee considers, and the staff agrees, that the intent of this regulation is that a Type A, B, or C Test, as applicable, be conducted to determine containment integrity. Because of the location of the weld repair, pressure testing can only be accomplished by performing a Type A primary containment integrated leak rate test.

3. EVALUATION

The weld repair was performed in accordance with the construction code applied to the original installation code, ANSI B-31.1-1967 with Addenda A. This code states that the types, extent and method of examination and limits of

imperfections of repair welds shall be the same as for the original weld. For this type of weld repair, the code does not require radiography or surface examinations, but does require that leak tightness be demonstrated. Therefore, the licensee has committed to an alternate testing program consisting of 100% radiography, surface examination, and a flow test involving the weld repair to verify the structural integrity of the piping, in lieu of a Type A, Type B, or Type C test.

Since an isolatable volume which encloses the weld repair cannot be attained, the only leak rate test which could be accomplished is a Type A primary containment integrated leak rate test (PCILRT). However, the time required to perform such a test would not provide a significant increase in confidence regarding system integrity over that attained by the alternate testing program.

The staff has reviewed the licensee's alternate testing program of 100 percent radiography, surface examination, and in-service flow testing involving the subject piping and concluded that these tests are sufficient to ensure structural and leak tight integrity of the subject piping. This testing will be performed in accordance with applicable ASME and ANSI codes. Therefore, the staff concludes that these non-destructive examinations of the weld meet the intent of TS Section 4.7.A.2.f and Section IV.A Appendix J to 10 CFR Part 50, which is to assure that modifications to the containment pressure boundary are leak tight. The licensee has further committed to perform a Type A test during the refueling outage in 1990.

Based on an evaluation of the alternate tests performed to ensure system integrity, and since a leak rate test would not provide a significant increase in confidence regarding system integrity, and in recognition that the repairs and subsequent testing is in conformance with the applicable ASME and ANSI codes, the staff concludes that the proposed TS amendment is acceptable.

4.0 NEED FOR EXPEDITED ACTION

This emergency situation developed as a result of in-service inspections carried out during the current mid-cycle maintenance outage. UT and RT testing as part of an augmented ISI program has revealed the presence of a slag inclusion within Weld No. 10-14-884A on the Core Spray system test return line (10"-W23-152-9B). This weld was created as part of the plant's initial construction. At that time, 100% volumetric examination was not required for this particular weld location and the defect went undetected. It was not anticipated that a weld which previously passed all required examinations, and which is not susceptible to IGSCC, would be found with a defect such that immediate repair would be necessary.

The proposed Technical Specification change is required to allow the licensee to resume power operation following the current maintenance outage. If the amendment is not issued, operation of the facility would be delayed. If the licensee was required to perform a PCILRT prior to startup, this would delay startup even further, since substantial lead time is required to rent the necessary equipment, perform Types B and C local leakage rate tests on all containment penetrations, contract for consultant personnel, and send

instrumentation to an outside laboratory for calibration. Therefore, conducting PCILRT would delay startup several weeks.

Therefore, the staff has determined that the licensee has made a timely amendment application once the problem was discovered and analyzed.

We conclude that the licensee has justified the need for emergency action pursuant to 10 CFR 50.91(a)(5).

5.0 FINAL DETERMINATION OF NO SIGNIFICANT HAZARDS CONSIDERATION

The foregoing evaluation demonstrates that the compensatory measures being taken by the licensee, consisting of an alternate inspection program (100 percent radiography, surface examination, and an in-service functional test), will ensure the structural integrity and leak tightness of the weld and associated piping.

In addition, the construction code which was applied to the original installation and also to the repair of the weld, ANSI B-31.1-1967 with Addenda A, requires that the types, extent, and method of examination and limits of imperfections of repair welds must be the same as for the original weld. The examination required by this code allows substitution of 100 percent radiography where a hydrostatic test is not practicable. Therefore, the code requirements are satisfied. We therefore conclude that operation of the facility in accordance with the proposed amendment would not:

- a. involve a significant increase in the probability or consequences of an accident previously evaluated. The repair of the Core Spray weld will improve the structural capability of the existing weld. It is required that weld flaws, such as the one identified, be repaired prior to plant operation. The proposed change allows repair of the weld without performing a leakage test as currently required by the Technical Specifications. Compensatory measures include 100% radiography of the repaired weld to assure the structural integrity of the weld and surface examination to detect any surface flaws which could lead to leakage paths. This weld forms part of the containment pressure boundary. Since the structural integrity of the containment pressure boundary through the weld is assured, no change is made to the probability of occurrence or consequences of any accident previously evaluated.
- b. create the possibility of a new or different kind of accident from any accident previously evaluated. Not performing an ILRT this outage cannot initiate any type of accident. The repair of the weld restores the Core Spray piping to its original design and structural capability. The weld repair and associated testing cannot initiate any type of accident.

- c. involve a significant reduction in a margin of safety. Performance of 100% radiography in lieu of a pneumatic leak rate test on the weld repair is conservative. The construction code (ANSI B-31.1-1967) allows for 100% radiography as an alternative to leakage testing when such testing is not practicable. There is no reduction of any margin of safety.

The staff, therefore, concludes that there are no significant hazards associated with the proposed TS change.

6.0 ENVIRONMENTAL CONSIDERATION

Pursuant to 10 CFR 51.21, 51.32 and 51.35, an environmental assessment and finding of no significant impact was published in the Federal Register on October 3, 1989 (54 FR 40759).

Accordingly, based upon the environmental assessment, the Commission has determined that issuance of this amendment will not have a significant effect on the quality of the human environment.

7.0 CONCLUSION

We have concluded, based on the considerations discussed above, that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, and (2) such activities will be conducted in compliance with the Commission's regulations and the issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public.

Dated: October 4, 1989

PRINCIPAL CONTRIBUTOR:

D. LaBarge