



UNITED STATES
NUCLEAR REGULATORY COMMISSION
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April 14, 1997

DOCKET: 70-7001

CERTIFICATE HOLDER: United States Enrichment Corporation
Paducah Gaseous Diffusion Plant
Paducah, KY

SUBJECT: COMPLIANCE EVALUATION REPORT: APPLICATION DATED
DECEMBER 23, 1996, AUTOCLAVE CONTAINMENT VALVES
PRESSURE DECAY TESTING

BACKGROUND

By letter dated December 23, 1996, the United States Enrichment Corporation (USEC) requested an amendment to the certificate of compliance for the Paducah Gaseous Diffusion Plant (PGDP). The request is to revise Technical Safety Requirements (TSRs) associated with the Autoclave High Pressure Isolation System for the C-360, C-333A, and C-337A facilities. Specifically, this amendment revises the surveillance requirements for the autoclave pressure decay test specified in TSRs 2.1.3.1 and 2.2.3.1. Page changes to the Safety Analysis Report were submitted to reflect the new autoclave piping configuration. This amendment request was submitted in accordance with Compliance Plan Issue 3.

DISCUSSION

In Compliance Plan Issue 3, Action 10, USEC committed to make modifications to the autoclave piping that would allow a pressure decay test to be performed separately for the inner and outer containment valves and to assure that backpressure does not mask leaks during the testing. These modifications were to be made to all autoclaves in C-333A, C-337A, and C-360. USEC also committed to submit a revised TSR to reflect the new testing configuration.

The feed facility autoclaves in C-333A and C-337A and the sampling and transfer facility autoclaves in C-360 provide a containment function in the event of a cylinder leak or pigtail rupture. The containment function is demonstrated in part by a pressure decay or leak rate test of the autoclave. To confirm the containment function works as designed, the test is conducted twice, with valve positions selected to test both the inner and outer isolation barriers. At certification, the configuration of piping and valves of some of the autoclave penetrations precluded the performance of independent tests of both the inner and outer valves. The TSR listed those barriers that were not configured to permit practical control or monitoring of the outboard pressure.

For the feed facility autoclaves, USEC installed a vent path on the autoclave penetration piping to relieve the downstream pressure for the second isolation valve of the air purge line, uranium hexafluoride (UF₆) relief line, and steam supply line for each autoclave. For the sampling and transfer autoclaves, a vent path was installed to relieve the pressure

downstream of both isolation valves on the air buffer line to the tilting mechanism gear box. In addition, for the sampling and transfer autoclaves, the UF₆ relief piping connection to the UF₆ sample line has been moved to the outboard side of the UF₆ sample line outboard isolation valve. The rupture disk in the UF₆ relief line no longer acts as an isolation barrier. These changes allow each penetration isolation valve to be tested to demonstrate that the containment function will be available if needed.

The proposed TSR changes revise surveillance requirement 2.1.3-13 and 2.2.3.1-3 to reflect the ability to independently test all inboard and outboard autoclave isolation valves. Safety Analysis Report changes have been provided to reflect the new configurations.

Modifications have not been made to eight of the autoclaves, six in C-337A and two in C-360. These autoclaves are currently inoperable. Modifications will be completed prior to returning the inoperable autoclaves to an operable status. Because the modifications have not yet been made to these autoclaves, Compliance Plan Issue 3, Action 10 will remain open for tracking purposes only. The staff considers USEC to have met Action 10 for the operable autoclaves. If the eight autoclaves are not returned to service, there is no need to make the modifications. There is also no need to revise the Compliance Plan. USEC should inform the NRC in writing when the modifications are complete on the eight remaining autoclaves or if they are permanently removed from service.

ENVIRONMENTAL REVIEW

Issuance of an amendment to Certificate of Compliance GDP-1 to revise the TSRs on the Autoclave High Pressure Isolation System is subject to the categorical exclusion provided in 10 CFR 51.22(c)(19). Therefore, neither an environmental assessment nor an environmental impact statement is required for the proposed action.

CONCLUSION

The proposed changes to the TSR surveillances provide an enhanced assurance that the autoclave containment function will be available in the event of a UF₆ release into the autoclave. The staff recommends that the revised TSR be approved.

The Region III Inspection staff have no objection to this proposed action.

Principal Contributor

Merri Horn

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