



United States
Enrichment Corporation

Paducah Site Office
P.O. Box 1410
Paducah, KY 42001

Tel: 502 441-5803
Fax: 502 441-5801

May 27, 1997

United States Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, D.C. 20555

SERIAL: GDP 97-1009

Paducah Gaseous Diffusion Plant (PGDP), Docket No. 70-7001
Reply to Notice of Violation (NOV) 97-203-03

Nuclear Regulatory Commission (NRC) letter dated April 25, 1997, transmitted the subject NOV involving an inoperable fire sprinkler system in Building C-331. USEC's response to the violation is provided in Enclosure 1. Enclosure 2 lists the commitments made in this report. Unless specifically noted, the corrective actions specified in each enclosure apply solely to PGDP.

If you have any questions regarding this submittal, please contact Bill Sykes at (502) 441-6796.

Sincerely,

Steve Polston
General Manager
Paducah Gaseous Diffusion Plant

SP:DCH:mlg

Enclosures

cc: Regional Administrator, Region III, USNRC
NRC Resident Inspectors, PGDP

9706040209 970527
PDR ADOCK 07007001
C PDR

NFOY 1/1



030089

Enclosure 1

**UNITED STATES ENRICHMENT CORPORATION (USEC)
REPLY TO NOTICE OF VIOLATION (NOV) 97-203-03**

Violation Cited

Technical Safety Requirement 2.4.4.5 requires that the fire protection sprinkler systems in process buildings C-331, C-333, C-335, and C-337 shall be operable.

Contrary to the above, on March 26, 1997, the NRC inspectors identified a section of missing pipe in the fire protection sprinkler system of process building C-331 which rendered this portion of the system inoperable.

I. Background Information

Between mid-March and early-May 1997, fifteen fire protection sprinkler system deficiencies were identified at PGDP and reported to the NRC --- see Event Report ER-97-04, dated April 18, 1997, and Revision 1 thereto, dated May 16, 1997.

One of the deficiencies covered by ER-97-04 and ER-97-04, Revision 1, NRC Event Number 32026, is the subject of NOV 97-203-03. The material provided below is intended to complement our previous submittals relative to the specific issue of an inoperable fire sprinkler system in Building C-331:

During a tour of Building C-331 on March 26, 1997, an NRC inspector and a PGDP fire services engineer identified an 18.5 foot section of sprinkler pipe and two associated sprinkler heads that were missing. A close inspection of the affected area revealed unpainted anchor points for a piece of equipment that had been bolted to a structural steel beam next to where the missing pipe should have been located. It is believed that, at some time in the past, the affected section of sprinkler piping was disconnected to avoid interference with the removal of beam mounted equipment and not subsequently reinstalled.

NRC Inspection Report 70-7001/97-203 states, in part:

"The violation ... is of concern because, although your staff initially identified the problem on March 1, 1997, further investigation and effective corrective action were not taken to restore operability of the degraded system until the NRC observed the condition during a building tour on March 26, 1997."

During the construction and installation of the fire protection sprinkler system in the late-1960's, many branch lines were installed in areas where they were not required and were subsequently

removed during the same time period. As a result, many of the sprinkler systems contain "plugged tees" and disconnected pipes which do not affect the operability of the system. This is particularly evident in Building C-331 and C-335, where PGDP inspectors have logged several hundred of these "plugged tees" on walkdown data sheets. However, as a precaution, "plugged tees" and other problems were required to be verified by a fire protection or system engineer to assure that they were correctly identified and judged by the inspectors as not affecting system operability.

On March 1, 1997, PGDP inspectors had identified the subject problem as a "plugged tee" on a walkdown data sheet and it was judged as not potentially affecting system operability. At that time, verification inspections by fire protection or system engineers were taking several weeks to occur due to a substantial backlog of walkdown findings. On March 22, 1997, a fire protection engineer verified that the "plugged tee" did not effect system operability. However, after the NRC inspector and fire protection engineer identified the disconnected piping on March 26, 1997, it was discovered that the fire protection engineer had checked a "plugged tee" that was different from the one identified on the March 1, 1997 walkdown data sheet. Once the problem was identified as affecting system operability, prompt corrective actions were taken.

Inspection Report 97-203 further states that the "missing pipe could have been identified ... and corrective actions could have been taken immediately if drawings were used during the facility walkdown." However, "as-built" drawings do not exist for the PGDP sprinkler systems. The original system configuration is shown on an extensive set of base drawings and subsequent system changes are shown on separate modification drawings. Thus, there are not integrated, updated drawings of the PGDP sprinkler systems, making it impractical to use the extant drawings for facility walkdowns.

II. Reasons for Violation

The subject fire protection sprinkler system deficiency, and the related problems found at PGDP during the above mentioned sprinkler system inspections, are legacy issues. That is, they originated prior to the implementation of effective modification design control, work control and configuration management programs at the plant. The reason for the violation was the failure to have effective programs and procedures in place to deal with modification design control, work control and configuration management. A contributing cause was the lack of inspection criteria which would have aided fire services personnel in identifying deficiencies earlier.

III. Corrective Actions Taken and Results Achieved

In 1995, a modification design control program was implemented at PGDP. In 1996, a work control program was implemented at the plant. And earlier in 1997, a configuration management program was implemented. These programs are intended to assure that future maintenance and

modification activities are controlled so that problems such as the subject disconnected sprinkler system piping do not recur.

As discussed in ER-97-04 and ER-97-04, Revision 1, a limited scope inspection of the sprinkler systems and of sprinkler coverage between bypass enclosures and valve access platforms was completed in Buildings C-310, C-315, C-331, C-333, C-335 and C-337 during 1996.

Also as indicated in ER-97-04 and ER-97-04, Revision 1, between January 9 and May 4, 1997 a second, more comprehensive, walkdown of the sprinkler systems in the process buildings was completed. Areas in which major modifications had been performed were addressed in this inspection, including areas that were not visible from the floor.

On March 6, 1997, an Engineering Service Order (ESO Z98400) was initiated to address identified sprinkler system deficiencies that required drawing revisions.

On March 26, 1997, within 30 minutes of the identification of the subject inoperable sprinkler system (System 17 in Building C-331), a compensatory fire patrol/watch of the affected area was initiated pursuant to T&E 2.4.4.5.

Sprinkler System 17 in Building C-331 was taken out of service on April 4, 1997 to install the missing pipe and sprinkler heads. These repairs were completed, post-maintenance tests were performed, and the system was declared operable on April 6, 1997.

On May 15, 1997, fire protection engineers completed a review of data sheets prepared during the above mentioned January - May 1997 sprinkler system walkdowns. Also, problems identified during the inspections were documented in plant problem reports.

IV. Corrective Actions to be Taken

By July 1, 1997, Engineering will update modification drawings affected by required modifications as a result of sprinkler system deficiencies corrected under ESO Z98400. The drawings will be "as-built" to reflect true field configuration in accordance with approved plant procedures.* **

By August 25, 1997, Procedure CP4-SS-FS6111, "TSR Surveillance, Inspection, and Testing of Wet Pipe Sprinkler Systems," will be revised to include more detailed inspection criteria. Included will be a requirement to look for missing sprinkler piping, as well as damaged or incorrectly oriented sprinkler heads. Lessons learned as a result of the current walkdown effort will be included in the procedure revision.*

By September 5, 1997, previously identified sprinkler system deficiencies that affect system operability will be corrected.

By October 1, 1997, any drawings affected by modifications as a result of sprinkler system deficiencies identified during the later phases of the January - May 1997 system walkdowns and not corrected under ESO Z98400 will be updated.

*These actions/commitments were previously communicated in ER-97-04 and ER-97-04, Revision 1.

**This is not a commitment to correct "as-built" drawings for the entire fire protection system. Rather, this action will assure that drawings reflect the plant configuration in accordance with ESO Z98400.

V. Date of Full Compliance

Full compliance was achieved when the corrective actions for the specific deficiency identified in NOV 97-203-03 were completed on April 6, 1997. The corrective actions being taken to prevent recurrence will be completed by October 1, 1997.

Enclosure 2

List of New Commitments

By September 5, 1997, previously identified sprinkler system deficiencies that affect system operability will be corrected.

By October 1, 1997, any drawings affected by modifications as a result of sprinkler system deficiencies identified during the later phases of the January - May 1997 system walkdowns and not corrected under ESO Z98400 will be updated.