USEC

United States
Enrichment Corporation

2 Democracy Center
6903 Rockledge Drive
Bethesda, MD 20817

Tel: (301) 564-3200
Fax: (301) 564-3201

JAMES H. MILLER
VICE PRESIDENT, PRODUCTION

Dir: (301) 564-3309
Fax: (301) 571-8279

June 24, 1997

SERIAL: GDP 97-0106

U.S. Nuclear Regulatory Commission
Attention: NRC Operations Center
Washington, D.C. 20555-0001

Portsmouth Gaseous Diffusion Plant (PORTS)
Docket No. 70-7002
Initial Notification of 10 CFR 21 Report

The purpose of this letter is to provide initial notification to the NRC in accordance with 10 CFR 21.21(d)(3) of a reportable defect that has been identified at the Portsmouth Gaseous Diffusion Plant (PORTS). The defect is associated with Release 21.1 of the STAAD-III structural analysis program supplied by Research Engineers, Inc., 22700 Savi Ranch, Yorba Linda, California, 92887-4608. This program is being used to evaluate the existing crane support structure at the X-326 ERP Withdrawal Station as part of an ongoing project to replace the existing liquid UF_6 handling crane at this location.

An error was identified in Release 21.1 of the STAAD-III program which yielded non-conservative results. If the results provided by Release 21.1 of the program had been used as input for the design of the crane support structure, the margin of safety could have been reduced and the potential to drop a cylinder containing liquid UF_6 could have increased, thereby creating a substantial safety hazard.

The Paducah Gaseous Diffusion Plant has been apprised of this situation. The associated PORTS 10 CFR 21 evaluation checklist and a copy of the pertinent PORTS problem report is enclosed.

Any questions related to this subject should be directed to me at (301) 564-3309 or Mark Lombard at (301) 564-3248.

Sincerely,

James H. Miller
Vice President, Production

Enclosures: As stated

cc: NRC Region III Office
NRC Resident Inspector - PGDP
NRC Resident Inspector - PORTS

ENCLOSURES

PORTS PART 21 CHECKLIST AND RELATED PROBLEM REPORT

10 CFR PART 21 EVALUATION CHECKLIST

The following questions provide the criteria for evaluation of 10 CFR Part 21 reportability:

A.1 No ✓ Yes ___ Has the NRC already been informed of this condition pursuant to 10 CFR 21 (for example, by a supplier)?

A.2 No ___ Yes ___ If yes, has USEC or LMUS been named as a recipient of the defective item?

A.3 No ✓ Yes ___ Has this condition already been reported to NRC in accordance with procedure UE2-MC-RE1030?

If the answer to Questions A.1 and A.2 are "Yes", or the answer to Question A.3 is "Yes", the condition need not be reported under 10 CFR 21. Attach objective evidence of notification of the NRC and complete Part E.

If the answers to Questions A.2, A.2, and A.3 are "No", continue with the evaluation.

B.1 No ___ Yes ✓ Is the identified condition a deviation or failure to comply associated with a basic component (including design, analysis, inspection, testing, fabrication, replacement parts, or consulting services)?

If the answer to Question B.1 is "No", the condition is not reportable under 10 CFR 21; attach basis for conclusions and proceed to Section E. If the answer to Question B.1 is "Yes", continue the evaluation.

B.2 No ___ Yes ✓ If the answer to Question B.1 is "yes", has the basic component been delivered to USEC/LMUS and accepted for use in the plant or an activity (includes USEC-dedicated commercial grade items)?

If the answer to Question B.2 is "No", the condition is not reportable under 10 CFR 21; attach basis for conclusions and proceed to Section E. If the answer to Question B.2 is "Yes", condition is potentially reportable. Continue with the evaluation.

C. Further, does the activity or basic component contain any of the following types of conditions? (Deviation means a departure from the technical requirements included in a procurement document.)

No ___ Yes ✓ 1) The installation, use, or operation of a basic component containing a deviation?

No ✓ Yes ___ 2) A condition or circumstance involving a basic component that could contribute to exceeding a safety limit as defined in the GDPs Technical Safety Requirements (TSRs)?

No ✓ Yes ___ 3) A failure to comply with any applicable regulation, order, or certificate issued by the NRC?

If all of the answers in this section are "No", the condition is not reportable; attach basis for conclusion and proceed to Section E. If any answers are "Yes", continue with the evaluation.

D. Could the deviation or failure to comply create a substantial safety hazard resulting in any of the following (assume there are no redundant or back-up systems):

No ✓ Yes ___ 1) Exposure in excess of 10 CFR 20.1201 limits

No ✓ Yes ___ 2) Exposure of an individual in an unrestricted area to more than 0.5 rem in one calendar year (10 CFR 20.1301(c))

No ___ Yes ✓ 3) Release of radioactive material to an unrestricted area in excess of the limits in 10 CFR 20, Appendix B, Table 2

No ___ Yes ✓ 4) A deficiency which seriously compromised the ability of a UF_6 confinement system to perform its designated function

No ___ Yes ___ 5) Other (explain) _____

If all answers in this section are "No", the condition is not reportable; complete Part E. If any answer is "Yes", condition is reportable. Continue with evaluation.

E. Evaluation results and recommendation. Recommend condition be reported?

No ___ Yes ✓ If answer is "Yes", sign this part and continue to follow procedure UE2-EG-GE1039. Sign the evaluation checklist and forward to the Manager, NRA. If answer is "No", evaluation is complete. Sign the evaluation checklist and forward to Commitment Management for closure of Problem Report.

Summary of Evaluation and basis for conclusions

Reference: PR-PTS-97-4184, Error in Structural Analysis Software

STAAD III, Revision 21.1, was used to evaluate the existing ERP crane support structure for Project No. E2072, X-326 ERP Crane Replacement Project. Problem Report No. PR-PTS-97-4184 identified an error in this software prior to final approval of the design package, therefore, no field modifications have been implemented. Because an error in the analysis of a liquid UF_6 handling system could compromise the integrity of that system, this defect has been determined to be reportable under the notification requirements of 10 CFR Part 21.

Investigator TOM JOHNSON (Name) Tom Johnson (Signature) 6/9/97 (Date)

Independent Reviewer: MACK HARRIS (Name) (Signature) 6/9/97 (Date)

NRA: Ronald Gibson (Name) (Signature) 6/11/97 (Date)

Concur Goldsmith 6/9/97

10CFR21 97-0013

UE-812
(8-21-96)

PROBLEM REPORT

- Use Black Ink and Print Only -

☐ PGDP ☐ HQ ☒ PORTS

Prepared By	Badge Number	Extension	REPORT NUMBER
TOM JOHNSON	61057	2853	PR PTS - 97 - 4184

Organization No.: X31 Group No.: 815 Mail Address: 1203

Discovery Date: 4/25/97 Discovery Time: 3:00 P.M. Building No.: X-100 Shift: 0

Drawing / Specification / Procedure No.: _____ Rev.: _____ In Hand Procedure? ☐ Yes ☐ No ☒ N/A

DESCRIPTION OR NATURE OF PROBLEM: (Attach additional sheets if needed)
ERROR DISCOVERED IN STRUCTURAL ANALYSIS SOFTWARE. STAAD-III / ISDS IS A PROPRIETARY PROGRAM OF RESEARCH ENGINEERS, INC. (REI). AN ERROR HAS BEEN DISCOVERED IN ONE OF THE PROGRAM'S LOADING APPLICATIONS (i.e., WHEN A CONCENTRATED LOAD IS APPLIED TO THE WEAK AXIS OF A MEMBER IN A GLOBAL DIRECTION). THE PROBLEM APPEARS TO BE ONLY WITH RELEASE 2.1 OF THE SOFTWARE, SINCE THE ERROR DID NOT OCCUR WHEN RAN ON RELEASE 2.0. THIS WAS DISCOVERED DURING REVIEW OF THE STRUCTURAL ANALYSIS OF THE ERP CRANE SUPPORT STRUCTURE FOR PROJECT No. E2072, WHICH IS STILL IN THE DESIGN PHASE (i.e. NO FIELD MODS IMPLEMENTED).

ACTIONS TAKEN:
- FAXED AND E-MAILED EVIDENCE OF ERROR TO TECHNICAL REP AT REI. RECEIVED ACKNOWLEDGEMENT OF PROBLEM BACK FROM THEM ALONG WITH PROMISE OF NEW SOFTWARE WITH PROBLEM RECTIFIED.
- FAXED EVIDENCE AND COPY OF P.R. TO PGDP CIVIL & STRUCTURAL ENGINEERING MANAGER.

Was the Problem Report reviewed with Manager? ☒ Yes ☐ No

ACTIONS RECOMMENDED:
- CONTINUE REVIEW OF ERP CALCULATIONS AND CORRECT AS NECESSARY
- INVESTIGATE ANY OTHER APPLICATIONS OF SOFTWARE AT PLANTS
- PERFORM 10 CFR PART 21 EVALUATION

Would you like to have a copy of this report when it is closed? ☒ Yes ☐ No

TO BE COMPLETED BY THE PSS Further Shut Required 4/25/97 1749

TYPE OF SSC: ☐ OSR/TSR ☐ Q Item ☐ Safety System ☐ AQ Item ☐ NCS ■ N/A

INITIAL ASSESSMENT	Y	N	N/A
1. Operability Decision Required	☐	■	☐
2. Is Structure or Component Operable?	☐	☐	■
3. Is System Operable?	☐	☐	■
4. Reportable?	☐	■	

Categorization Date: 4/25/97 Time: 1714

Justification/Comments/Actions:

Keith Vandupool
PSS Signature

TO BE COMPLETED BY COMMITMENT MANAGEMENT

Process Condition Code:	Phenomenon Code:	Equipment Code:	Consequence Code:

RC 0/210 (01-R30-N92)-PORTS