



Tennessee Valley Authority, Post Office Box 2000, Decatur, Alabama 35609-2000

May 19, 2006

10 CFR 50.36a(a)(2)
10 CFR 50, Appendix I,
Section IV.B.1

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Mail Stop: OWFN, P1-35
Washington, D.C. 20555-0001

Gentlemen:

In the Matter of)	Docket Nos. 50-259
Tennessee Valley Authority)	50-260
		50-296

**BROWNS FERRY NUCLEAR PLANT (BFN) - UNITS 1, 2, AND 3 -
UPDATE TO THE 2004 ANNUAL RADIOACTIVE EFFLUENT RELEASE
(ARER) REPORT**

This letter provides an updated 2004 annual radioactive effluent release (ARER) report. The original ARER was submitted to the NRC on April 28, 2005. This updated 2004 ARER covers the period from January 1, 2004, through December 31, 2004, and supersedes the previous ARER.

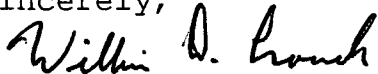
During a follow-up review of the 2004 ARER, it was identified that 17 values on 6 tables were erroneous. Enclosure 1 provides a summary of the changes. The previous values were a result of incorrect data input to the computer program. A problem evaluation report was generated to address this incident in our corrective action program. Enclosure 2 provides a complete updated 2004 ARER.

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A review of the 2004 ARER evaluated the extent of condition. The review did not identify any additional erroneous values. If you have any questions concerning this updated ARER report, please contact me at (256) 729-2636.

Sincerely,



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ENCLOSURE 1

UPDATE SUMMARY

- (1) In Table 4, on page E1-11, the Dose value for external Gamma Air was updated to $4.6E-11$ mrad from $4.5E-11$ mrad.
- (2) In Table 4, on page E1-11, the Dose value for Organ Doses to a Child/Thyroid was documented as $7.4E-03$ mrem when, in fact, the updated calculation of the data for that value shows that it should have been $7.6E-03$ mrem.
- (3) In Table 4, on page E1-11, the Population doses for Maximum Organ Dose was updated to $1.8E-02$ man-rem (Liver) from $1.7E-02$ man-rem (Liver).
- (4) In Table 9, on page E1-16, the Thyroid Dose (mrem) fourth-quarter value for thyroid dose (airborne) should have been $7.6E-03$ mrem instead of $7.4E-03$ mrem.
- (5) By inclusion of the erroneous Thyroid Dose (mrem) data, the total dose for the fourth quarter was also affected. The previously recorded value of $9.0E-03$ mrem should have been $9.2E-03$ mrem.
- (6) Finally, in table 9, it should be noted that the cumulative total dose for the thyroid changed from $3.6E-02$ mrem to $3.7E-02$ mrem.
- (7) On page E3-8, in item B.1 (Iodine-131), the fourth-quarter value for was submitted as $1.09E-03$ Curies; however, it should have been $1.14E-03$ Curies. Consequently, this also affected item B.2 described below (8).
- (8) On page E3-8, in item B.1 (Iodines), the fourth-quarter value for Average Release Rate for Period was submitted as $1.38E-04$ uCi/sec; however, it should have been $1.44E-04$ uCi/sec.
- (9) On page E3-8, in item D.1 (Tritium), the fourth-quarter value for total tritium release was submitted as $8.61E+00$ Curies; however, it should have been $8.81E+00$ Curies. Consequently, this also affected item D.2 described below (10).
- (10) On page E3-8, in item D.2 (Tritium), the fourth-quarter value for Average Release Rate for Period was submitted as $1.08E+00$ uCi/sec; however, it should have been $1.11E+00$ uCi/sec.

- (11) On page E3-13, in item 2 (Iodines), the fourth-quarter value for I-131 was submitted as $7.61\text{E-}04$ Curies; however, it should have been $8.09\text{E-}04$ Curies. Consequently, this also affected item Total for Period described below (13).
- (12) On page E3-13, in item 2 (Iodines), the fourth-quarter value for I-133 was submitted as $2.49\text{E-}03$ Curies; however, it should have been $2.60\text{E-}03$ Curies. Consequently, this also affected item Total for Period described below (13).
- (13) On page E3-13, in item 2 (Iodines), the Total for Period value was submitted $3.25\text{E-}03$ Curies; however, it should have been $3.41\text{E-}03$ Curies.
- (14) On page E3-14, in item 3 (Particulates-Others), the fourth-quarter value for Y-91m was submitted $1.07\text{E-}03$ Curies; however, it should have been $1.21\text{E-}03$ Curies. Consequently, this also affected item Total for Period described below (15).
- (15) On page E3-15, in item 3 (Particulates-Others), the Total for Period value was submitted as $2.05\text{E-}03$ Curies; however, it should have been $2.19\text{E-}03$ Curies.
- (16) On page E3-15, in item 4 (Tritium), the third-quarter value was submitted as $7.98\text{E+}00$ Curies; however, it should have been $7.99\text{E+}00$ Curies.
- (17) On page E3-15, in item 4 (Tritium), the fourth-quarter value was submitted as $6.74\text{E+}00$ Curies; however, it should have been $6.93\text{E+}00$ Curies.

ENCLOSURE 2