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OCAN071204

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U.S. Nuclear Regulatory Commission  
Attn: Document Control Desk  
Washington, DC 20555

**SUBJECT:** Correction to the Annual Radioactive Effluent Release  
Report for Calendar Years 2009, 2010, and 2011  
Arkansas Nuclear One – Units 1 and 2  
Docket Nos. 50-313 and 50-368  
License Nos. DPR-51 and NPF-6

**REFERENCES:**

1. Entergy letter dated February 25, 2010, "Annual Radioactive Effluent Release Report for 2009," (OCAN021001) (ML100630089)
2. Entergy letter dated April 29, 2011, "Annual Radioactive Effluent Release Report for 2010," (OCAN041104) (ML111190625)
3. Entergy letter dated April 27, 2011, "Annual Radioactive Effluent Release Report for 2011," (OCAN041201) (ML12121A03)

Dear Sir or Madam:

The Super Particulate Iodine and Noble Gas (SPING) radiation monitors at Arkansas Nuclear One, Units 1 and 2 (ANO-1 and 2) sample various plant ductwork for the presence of airborne radioactivity. The airborne concentrations in the ductwork can then be used to determine radioactive releases to the environment.

It has been determined that there was a lack of site documentation that show testing or analysis to substantiate that the parameters of the SPING radiation monitors is representative of the actual concentrations of radioactivity in the plant ductwork. An analysis was developed to determine the amount of plate-out of radioactive particulates and iodine in the instrument sample lines to the SPING radiation monitors. The analysis confirmed that an appreciable amount of plate-out can occur in the instrument sample lines for the various SPING radiation monitors.

The results of the analyses demonstrated that in general, plate-out of particulates was determined to be relatively small and the plate-out of organic iodine was insignificant. However, plate-out of elemental iodine was significant.

A review of the last three Annual Radioactive Effluent Release Reports (References 1 through 3) was performed to determine the impact of this issue. The results of this review are provided below.

#### **Calendar Year - 2009**

- ANO-1** The iodine activity was reported in Reference 1 to be 7.7 E-6 Curies (Ci). The revised activity is 1.45 E-5 Ci. The revised total dose to the thyroid is 0.0244 millirem (mrem) for the year which is 0.169% of the yearly limit of 15 mrem.
- ANO-2** The iodine activity was reported in Reference 1 to be 6.68 E-4 Ci. The revised activity is 1.25 E-3 Ci. The revised total dose to the thyroid is 0.31 mrem for the year which is 2.068% of the yearly limit of 15 mrem.

#### **Calendar Year - 2010**

- ANO-1** The iodine activity was reported in Reference 2 to be 8.37 E-7 Ci. The revised activity is 1.51 E-6 Ci. The revised total dose to the thyroid is 0.0284 mrem for the year which is 0.188% of the yearly limit of 15 mrem.
- ANO-2** There were no iodine releases for 2010. See Reference 2.

#### **Calendar Year - 2011**

- ANO-1** There were no iodine releases for 2011. See Reference 3.
- ANO-2** The iodine activity was reported in Reference 3 to be 5.98 E-6 Ci. The revised activity is 1.13 E-5 Ci. The revised total dose to the thyroid is 0.0325 mrem for the year which is 0.226% of the yearly limit of 15 mrem.

No other corrections in References 1, 2 and 3 have been identified.

The above corrections do not alter the conclusion of each of the reports. The revised gaseous release data show that the dose from both ANO-1 and ANO-2 are considerably below the Offsite Dose Calculation Manual limits and that radioactive effluents had an overall minimal dose contribution to the surrounding environment.

This submittal contains no regulatory commitments.

Should you have any questions, please contact me.

Sincerely,

***Original signed by Stephenie L. Pyle***

SLP/rwc

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