HITACHI

GE Hitachi Nuclear Energy

GEH Morris Operation
7555 East Collins Rd
Morris, IL 60450

JT 13-08

February 26, 2013

Director, Division of Spent Fuel Storage and Transportation
Office of Nuclear Material Safety and Safeguards
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555-0001

Regional Administrator
U.S. Nuclear Regulatory Commission, Region III
2443 Warrenville Road, Ste 210
Lisle, IL 60532-4352

ATTN: Document Control Desk

Subject: Annual Effluent Monitoring Report

References: NRC License SNM-2500, Docket 72-01
NRC Regulation 10CFR72.44

Dear Sir or Madam:

In compliance with 10CFR72.44 (d) (3) and SNM-2500 technical specification 8.2.1, this report documents our estimate of quantities of principal radionuclides released to the environment by the GE-Hitachi Morris Operation in 2012. This report also provides an estimate of the maximum potential dose to the pubic resulting from GE-Hitachi Morris Operation effluents and direct radiation for 2012.

Particulate radionuclides present on the stack monitor filters were Co-60 and Cs-137. Gaseous radionuclides evaluated were H-3 and Kr-85. The quantity of tritium released was calculated by multiplying basin water evaporative losses, by the average tritium levels in the fuel basins. The amount of Kr-85 released was calculated by multiplying the concentration found in samples taken directly over the basin water, by the airflow through the basin area.

COMPLY V1.6 (the EPA software program) was used to calculate the effective dose equivalent from the release of these radionuclides. The quantities released and the resultant maximum potential effective dose equivalents are shown in the following table.

Nuclide	Activity (Ci)	Discharged
Cs-137	1.109E-7	
Co-60	9.837E-8	
H-3	9.743E-3	
Kr-85	1.382E-0	

Effective Dose Equivalent **1.7 E-7 mRem/year**

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There are no liquid effluents from the site. Trace quantities of tritium were found in the site wells. Surface water tritium levels were below minimum detectable levels.

Tritium values below detectable levels are conservatively reported as the minimum detectable level.

The maximum potential Committed Effective Dose Equivalent to the public that could occur from surface water was calculated to be **6.57 E-3 mRem** - based on a person consuming water all year from the Sanitary Lagoons (144 pCi/l H-3).

The maximum potential Committed Effective Dose Equivalent to the public that could occur from groundwater was calculated to be **6.64 E-3 mRem** - based on a person consuming water all year from any of the following wells: DM-1, 2 and 5 (145.5 pCi/l H-3).

Measurement of direct radiation at the GE-Hitachi Morris Operation owner control boundary is accomplished using TLDs prepared and processed by a contractor, and direct measurement techniques. The calculated maximum potential Committed Effective Dose Equivalent to the public that could occur from direct radiation at the boundary of the owner controlled area was calculated to be **0.521 mRem** assuming the maximum time spent at the boundary is 24 hours per year.

The maximum potential radiation dose to the public, for 2012, would result from the sum of the stack effluent releases, the dose from drinking surface water from the Sanitary Lagoons, ground water from monitoring wells DM-1, 2 and 5, and from direct radiation at the owner controlled boundary. The sum of these sources for 2012 is **0.534 mRem**.

Sincerely,

Joe Tenorio
Plant Manager

cc: Director, USNRC NMSS
P. Longmire, NRC NMSS HQ
M. Learn, USNRC RIII,