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GNRO-2006/00039

July 31, 2006

U. S. Nuclear Regulatory Commission  
Attn: Document Control Desk  
Washington, DC 20555-0001

Subject: Groundwater Protection Baseline Information  
Grand Gulf Nuclear Station  
Docket No. 50-416  
License No. NPF-29

Dear Sir or Madam:

The nuclear industry, in conjunction with the Nuclear Energy Institute (NEI), developed a questionnaire to facilitate compilation of baseline information regarding the current status of site programs for monitoring and protecting groundwater. All participating nuclear sites agreed to provide the requested information to both NEI and the Nuclear Regulatory Commission.

The attachment to this letter contains the questionnaire response for Grand Gulf Nuclear Station. Please contact Mr. John Lassetter at (601)437-2115 if you have any questions or comments regarding this submittal.

There are no new commitments contained in this submittal.

Sincerely,

A handwritten signature in black ink, appearing to be "John Lassetter".

CAB:rj

cc: (See Next Page)

Attachment

cc: NRC Senior Resident Inspector  
Grand Gulf Nuclear Station  
Port Gibson, MS 39150

U.S. Nuclear Regulatory Commission  
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Mr. D. E. Levanway (Wise Carter)  
Mr. L. J. Smith (Wise Carter)  
Mr. N. S. Reynolds  
Mr. J. N. Compton

GNRO-2006/00039

**Attachment  
to  
GNRO-2006/00039  
Grand Gulf Nuclear Station  
Groundwater Protection Questionnaire Response**

## **Groundwater Protection Questionnaire Grand Gulf Nuclear Station – Entergy Nuclear South**

- 1. Briefly describe the program and/or methods used for detection of leakage or spills from plant systems, structures, and components that have a potential for an inadvertent release of radioactivity from plant operations into groundwater.**

**Response:**

Grand Gulf Nuclear Station monitors onsite groundwater (drinking water) through a periodic sampling program. This analysis includes gamma isotopic as well as tritium. Additional sampling/monitoring includes storm drains, sewage plant effluent, and outfalls.

Operations staff performs routine surveillance rounds. In addition, Plant employees are trained to report leaks inside and outside the station.

Guidance is included on generation of deficiency documents as well as reporting requirements.

- 2. Briefly describe the program and/or methods for monitoring onsite groundwater for the presence of radioactivity released from plant operations.**

**Response:**

GGNS has three onsite groundwater wells [two in routine use, one reserve, all draw from the same aquifer] supplying the site drinking water which are sampled annually. Groundwater gradient flow is FROM the power block TOWARD the sampled wells. Lower Level of Detection [LLD] criteria are per the Offsite Dose Calculation Manual / Radiological Environmental Monitoring Program.

- 3. If applicable, briefly summarize any occurrences of inadvertent releases of radioactive liquids that have been documented in accordance with 10 CFR 50.75(g).**

**Response:**

In March-April 1997 Plant Chilled Water System had onsite leaks outside the Controlled Access Area (CAA) but inside the Protected Area during Unit 1 Chiller replacement work. The leak contained approximately  $4.7E+2$  microcuries tritium. NOTE: A portion of leak entered the plant storm drain system and flowed to the Mississippi River via Hamilton Lake. The Mississippi River is the station's effluent release point for routine discharges.

On December 9, 1997 water leaked to the ground outside the CAA, but inside the Protected Area. The leak was result of hydrolaser activities in the Fuel Storage Pool. Cleanup included removal of rocks and dirt from the vicinity of leak.

On October 30, 1999, an internally contaminated hydrolaser, not in use, leaked water outside CAA but inside the Protected Area. Actions were taken to prevent water from entering the storm drains. Cleanup included removal of flakes of contaminated paint as well as a small quantity of rock and dirt from the vicinity of leak.

On June 6, 2006 firewater, which is not contaminated, developed a leak in auxiliary building. The leak ran across the floor and picked up enough radioactivity to be detectable. A portion of the leak reached an area outside the CAA via a doorway. The water outside of the CAA, but inside the Protected Area, was contained on a concrete surface. The water was collected in drums and moved inside the CAA.

- 4. If applicable, briefly summarize the circumstances associated with any onsite or offsite groundwater monitoring result indicating a concentration in groundwater of radioactivity released from plant operations that exceeds the maximum contaminant level (MCL) established by the USEPA for drinking water.**

**Response:**

No groundwater monitoring results have approached the allowable maximum contaminant level (MCL) established by the USEPA for drinking water.

- 5. Briefly describe any remediation efforts undertaken or planned to reduce or eliminate levels of radioactivity resulting from plant operations in soil or groundwater onsite or offsite.**

**Response:**

On December 9, 1997 water leaked to the ground outside the CAA, but inside the Protected Area. The leak was result of hydrolaser activities in the Fuel Storage Pool. Cleanup included removal of rocks and dirt from the vicinity of leak.

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