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August 1, 2006  
JAFP-06-0120

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

Subject: Groundwater Protection Baseline Information  
James A. FitzPatrick Nuclear Power Plant  
Docket No. 50-333  
License No. DPR-59

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.

Attachment 1 to this letter contains the questionnaire response for the James A. FitzPatrick Nuclear Power Plant (JAF). Please contact Ms. Crystal Boucher at (315) 349-6748 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 read "Jim Costedio".

Jim Costedio  
Regulatory Compliance Manager

JC/ed

Attachment 1: Baseline Information Questionnaire Response

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Baseline Information Questionnaire Response

## Attachment 1 to JAFP-06-0120

**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.**

The James A. FitzPatrick Nuclear Power Plant (JAF) monitors for potential leakage and spills of radioactive material using the following methods:

Groundwater in the vicinity of the reactor building is monitored by sampling and analyzing water collected in the reactor building perimeter sump and drain. The reactor building has a circumferential drain at the base of the reactor building, which collects groundwater from around the structure to prevent the buildup of hydrostatic pressure on the reactor building. Groundwater collected from this system is regularly sampled and analyzed for tritium and gamma emitting radionuclides.

JAF has a Spent Fuel Leakage Detection system, which is used to monitor potential leakage from the spent fuel pool. The collection system consists of drainage monitoring channels embedded in the concrete behind the liner that connects to telltale drains within the reactor building. Operations personnel perform routine surveillance rounds each shift. These rounds are conducted with the expectation that leaks and spills are identified and reported. Leaks and spills are addressed through: immediate clean-up, notifying supervision for assistance, writing a work request and / or entering the condition in the Corrective Action Program.

The Radiation Protection Staff currently performs routine outdoor area surveys of the following areas:

- Condensate Storage Tank (CST) Perimeter
- Waste Surge Tank Perimeter
- Independent Spent Fuel Storage Installation (ISFSI) Fence Perimeter
- Contaminated Sediment Area
- Kelly Building Perimeter
- Sea/Land Containers
- Waste Oil Storage Building
- Turbine Rotor Perimeter
- Stack
- Stack Sample Building
- Hazardous Waste Building
- Interim Waste Storage Facility
- Oil Separator Pit

If there were indications of leakage or problems, they would be identified during these surveys and reported via the Corrective Action Program.

## Attachment 1 to JAFP-06-0120

Chemistry technicians sample the plant unmonitored paths and outside systems. These samples are analyzed for tritium and gamma emitting radionuclides. If there were indications of leakage or problems they would be identified during this surveillance and reported. Samples are collected on a weekly or monthly basis as follows:

### Weekly:

- North and South Cable Tunnel Sumps (H3)
- Sewage Treatment Plant
- Spare Transformer Pad if radiological material is in storage

### Monthly:

- Diesel oil separator pit
- North and south cable tunnel sumps
- Reactor perimeter sump
- East storm drain
- West storm drain
- City/potable water
- Alternate Decay Heat Removal (ADHR) System<sup>1</sup>
- Temporary drywell chiller<sup>2</sup>.

Chemistry collects and analyzes soil samples from excavation sites if the soil is to be free-released from the site. These samples are analyzed for gamma activity.

Offsite sampling is performed under the Radiological Environmental Monitoring Program.

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

The FitzPatrick plant does not have onsite or offsite groundwater monitoring wells. However, as noted above, the reactor building perimeter sump is sampled on a monthly basis. This sump is approximately 30 inches below ground level and collects both groundwater and surface water run-off in the vicinity of the reactor building excavation. Samples from the perimeter sump are analyzed for tritium and gamma emitters to the Minimum Detectable Activities as listed in the Offsite Dose Calculation Manual (ODCM) for effluent monitoring.

### **3. If applicable, briefly summarize any occurrences of inadvertent releases of radioactive liquids that had the potential to reach groundwater and have been documented in accordance with 10 CFR 50.75(g).**

On March 18, 1991, JAF experienced a discharge of radioactive liquid to the environment. This release was the result of contaminating and over pressurizing the auxiliary boiler from the liquid radioactive waste evaporator bottoms. Radioactive material was subsequently discharged from the boiler to the atmosphere via the auxiliary boiler pressure relief valve. This was an airborne release but due to rain shower activity contamination from the building roofs was transported to the storm drains resulting in an unmonitored release offsite to Lake Ontario. Based on the assessment of the event, approximately 0.56 curries (excluding tritium) was released from the steam vent. (Reference: Docket No. 50-333, LER 91-004-00).

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<sup>1</sup> When the ADHR System is in service sampling is performed on a weekly basis.

<sup>2</sup> When the Temporary Drywell Chillers are in service sampling is performed daily.

## Attachment 1 to JAFP-06-0120

De-silting of the inlet canal forebay and the inlet canal reverse flow crosstie tunnel resulted in the removal of approximately 160 cubic yards of sediment material. Subsequent sampling of the sediment material documented that the material contained low levels of radioactivity. The silt is estimated to contain approximately 172 uCi of gamma emitting radionuclides. In 1992 the silt was stabilized and the presence of the material was documented in JAF's 10CFR50.75 (g) file (Reference: JAF-SE-92-139).

- 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 allowable maximum contaminant level (MCL) established by the USEPA for drinking water.**

There have been no groundwater monitoring results exceeding the allowable USEPA maximum contaminant levels for drinking water. There are no drinking water sources in the general vicinity of the plant ground water flow.

- 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.**

On March 20, 1991 following the release of radioactive material from the plant auxiliary boiler as noted in response to question 3 above, a Radiological Assessment Plan and Recovery Plan were developed and implemented. The recovery plan addressed each major decontamination task that was identified.