

August 17, 1978

Mr. Robert Kratzke  
U.S. Nuclear Regulatory Commission  
Fuel Reprocessing and Recycle Branch  
Mail Stop SS-396  
Washington, D.C. 20555

Dear Mr. Kratzke:

Docket 70-8

This letter is a request for NRC authorization for a temporary departure from normal operating procedures at Battelle's Columbus Hot Cell Laboratory.

Normal and routine operations associated with the fuel storage pool within the Hot Cell Laboratory are conducted at a radioactivity level of not more than  $1\text{E}-3 \mu\text{Ci/ml}$  alpha. Within the past two months we have noted an increase in the beta-gamma concentrations. Comparison of the beta-gamma concentrations with operations and activities during this period show the increased levels to be a direct result of additional fuel loadings handled and the installation of a new storage rack into the pool. These operations have apparently disturbed accumulated sediment at the bottom of the pool.

Currently, the pool water is being collected and analyzed at 3- to 4-day intervals. The beta-gamma concentrations have stabilized at approximately 30 percent of our normal operating limit of  $1\text{E}-3 \mu\text{Ci/ml}$  for beta-gamma. However, during late August and September, we will be installing an impact limiter on the bottom of the pool. We anticipate that operations associated with the installation of the impact limiter will further disturb accumulated sediment in the pool with a corresponding increase in beta-gamma concentration.

In order to assure compliance, we are requesting temporary authorization to conduct pool operations at an upper limit of  $1\text{E}-2 \mu\text{Ci/ml}$  beta-gamma concentration during pool cleaning and installation of the impact limiter. A temporary authorization to operate at the upper limit of  $1\text{E}-2$  beta-gamma through December 31, 1978, would allow adequate time for pool cleaning, installation of the impacter, and safe settlement of the pool water.

During this period of departure from normal operat. conditions, the following health physics monitoring and surveillance procedures would be conducted:

- (1) Work requests (authorization to perform operations having radiological safety implications) will be utilized during the course of pool modification. Work requests are designed to assure that personnel performing the task are

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Date... <i>8-28-78</i>
Log... <i>Aug 28 P-3</i>
By... <i>Wim</i>
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Action Compl. <i>9/28/78</i>



Applicant.....
Check No. <i>65477</i>
Amount/Fee Category <i>1400-1A</i>
Type of Fee <i>minor safety</i>
Date Check Rec'd <i>9/28/78</i>
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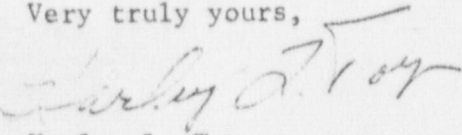
made fully aware of the specific radiological safety considerations. The request must be approved by the Laboratory Supervisor and the Health Physics Group.

- (2) Pool water samples will be collected and analyzed weekly.
- (3) The resin bags of ion columns will be replaced when readings of 300 mr/hr at one foot are reached.
- (4) It is anticipated that increased personnel doses should not occur in the immediate vicinity of the pool area during installation of the impact limiter. Any increased doses are likely to occur during change-out of the ion exchange resin bags and the monitoring associated with the change-out. Steps to minimize doses during this operation would include the following:
  - A remote monitoring device would be installed to reduce residence time within the resin column area.
  - We are improving the system of changing the prefilters located upstream of the resin columns in order to reduce the time required to change the prefilters. This action will be taken since it is anticipated that the prefilters will collect radioactive particulate material at an increased rate during the period of the installation of the impact limiter.
  - A pool underwater vacuum system will be installed to assist in the collection of the disturbed radioactive particulate sediment.

We maintain that the above health physics monitoring and surveillance procedures will assure safe radiological operations during pool modifications at a radioactivity level in the pool of not more than  $1\text{E}-2 \mu\text{Ci/ml}$  beta-gamma. The requested authorization for a departure from normal operating procedures to conduct pool modifications at the beta-gamma level of  $1\text{E}-2 \mu\text{Ci/ml}$  would extend through December 31, 1978. This time frame would provide the required time for the pool modifications and safe settlement of the pool water.

Should you require additional information in order to authorize this request, please call on us.

Very truly yours,

  
Harley L. Toy  
NRC Licensing Coordinator

HLT:lba