

JUN 30 1993

License No. SMB-179  
Docket No. 040-00672

MEMORANDUM FOR: Ronald R. Bellamy, Chief  
Nuclear Materials Safety Branch  
Division of Radiation Safety  
and Safeguards  
Region I

FROM: John H. Austin, Chief  
Decommissioning and Regulatory  
Issues Branch  
Division of Low-Level Waste Management  
and Decommissioning  
Office of Nuclear Material Safety  
and Safeguards

SUBJECT: REVIEW OF NUCLEAR METALS HOLDING BASIN CHARACTERIZATION  
REPORT

In response to your request of May 19, 1993, we reviewed the "Site  
Characterization Report for the Holding Basin," submitted by Nuclear Metals,  
Inc., and the draft deficiency letter your staff prepared. We have attached  
our comments in the Enclosure.

If you have any questions, please contact T.C. Johnson at 301-504-3603.

(Original Signed by \_\_\_\_\_)

John H. Austin, Chief  
Decommissioning and Regulatory  
Issues Branch  
Division of Low-Level Waste Management  
and Decommissioning  
Office of Nuclear Material Safety  
and Safeguards

Enclosure: As stated

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## Comments on Nuclear Metals Holding Basin Characterization Report

### 1. General

The report provides a good characterization of the uranium contaminated materials in the holding basin. However, Nuclear Metals have provided only limited data to support their conclusions regarding the extent of contamination in the areas surrounding the holding basin and whether uranium is migrating. Region I comments and the following describe additional information needed from Nuclear Metals.

### 2. Deficiency Letter, Comment No. 4

Suggest adding the following: "What are the minimum detectable concentrations using fluorimetric analysis?"

### 3. Deficiency Letter, Comment Nos. 5 and 6

I strongly agree with these comments. In fact, the additional soil samples taken by Nuclear Metals, adjacent to the holding basin as discussed in Section 4.2.1, are only surface samples above a four-inch depth. Suggest adding that these samples provide very little information regarding the extent of subsurface contamination around the holding basin. To further obfuscate the contamination levels at each sample point, the licensee composited these samples. There is insufficient data presented to support the licensee's conclusion that migration of uranium is insignificant. Also, the licensee indicated that the locations of the surface samples are presented in Appendix 5. Appendix 5 was not attached to the report provided to us for review.

### 4. Subbasin Gravel Analyses, Section 4.1

The licensee indicates that three borings were taken to assess the depth of migration into the gravel bed below the holding basin. However, the locations of these borings are not indicated. Also, the samples, applicable to various depths, were composites. The analytical data presented is insufficient to support a conclusion that migration of uranium below the holding basin is insignificant.

### 5. Section 5.0, First full para., p. 61

I assume that the test well ML-3-1 is the well ML-3 on the maps in Appendices 1 and 2. Note that wells HB-7 and HB-8 have uranium concentrations that substantially exceed the proposed EPA drinking water limit of 20 ug/l. Have additional wells been installed further downgradient from HB-7 and HB-8 and are there more recent data? There is insufficient data presented to conclude that there is no need for short-term remediation. In fact, groundwater data suggest that there has been groundwater migration of uranium and prompt remediation may limit further migration.

Enclosure

Piezometric surface data should also be presented to justify statements regarding the groundwater flow directions and heads. Well construction diagrams should also be presented.

6. Table 5.2, p. 63

Note that I was unable to find well HB-3 on the maps. Should this be PW-3?

7. General Groundwater Comments

In 1992, Nuclear Metals installed three multilevel monitoring wells (GZW-6, GZW-7, and GZW-8). Nuclear Metals should provide any groundwater and soil sample analyses that are available for these wells.

Hydrogeologic data and calculations should be provided so the characterization report becomes a "stand alone" document (references may be provided for supporting information that has already been provided to the NRC). The characterization report should describe the hydrogeologic environment of the site and, to support their analyses, provide soil boring logs, well construction diagrams, geologic cross-sections, geohydrologic parameters such as groundwater elevations and contours, hydraulic gradients, hydraulic conductivity data, permeability data, groundwater velocity and flow rate data, and information related to the migration potential in saturated and unsaturated aquifers. Nuclear Metals should also provide calculations used to support their conclusions.