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September 28, 1995

MEMORANDUM TO: Gary L. Shear, Chief, Fuel Facilities Section

THRU: J. W. McCormick-Barger, Chief, Decommissioning Section

FROM: William G. Snell, Senior Radiation Specialist

SUBJECT: REVIEW OF FINAL SURVEY PLAN FOR ABB COMBUSTION ENGINEERING

Per your request, we have reviewed the ABB Combustion Engineering Nuclear Fuel Final Survey Plan dated September 1, 1995. Our comments are attached. In conducting this review, it was our understanding that the licensee's intent is to perform a final survey in accordance with the guidance in NUREG-5849, "Manual for Conducting Radiological Surveys in Support of License Termination". However, this was a voluntary remediation by the licensee; therefore, they do not need to adhere to the guidance in NUREG-5849 if they choose not to. Our comments have mostly highlighted those areas where they were inconsistent with NUREG-5849.

You also indicated that a meeting is scheduled for October 2, 1995, with the licensee. We will be available to discuss our comments at the meeting if you would like our participation.

Attachment: As stated

bcc: PUBLIC (IE07)

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ATTACHMENT

ABB Combustion Engineering Nuclear Fuel

Review of September 1, 1995 Final Survey Plan

Review Comments

1) The licensee states it is their goal to remediate the site creek to an average contamination level of 30pCi/g with no single sample above 90pCi/g.

   First, the goal should be to remediate to an average value less than the guideline value, not to the value itself. Second, NUREG-5849 allows activity to exceed the guideline value (i.e., 30pCi/g) by up to a factor of three (i.e., 90pCi/g). However, the upper limit is dependent on the area of the activity. That is, the activity can only exceed the guideline value if the activity is less than $(100/A)^{\frac{1}{2}}$ times the guideline value, where A is the area of activity in square meters. (This is based on a 10 X 10 meter square grid.) Additionally, the activity at any location can not exceed three times the guideline value. As a result, any soil samples in excess of 30pCi/g may require additional sampling to define the size of the area of activity in excess of the guideline value to determine if it is acceptable to leave as found or if further remediation would be required.

2) Figure 1 provides the sample locations for site creek characterization.

   Examination of this Figure shows that for approximately 15 meters of the creek, the samples are being collected essentially on the east and west edges. I would recommend at least three samples be collected in the center of the creek through this stretch.

3) The Plan states that "Soil activity values are average values with no background subtraction (uranium background is approximately 2 pCi/g) for the entire survey unit of 600 m^2".

   Subtraction of background is acceptable based on NUREG-5849.

   NUREG-5849 (Section 8.5.4) specifies the soil activity average values for the survey unit are based on 100 m^2 grids, not the entire area, which in this case is given as 600 m^2.

4) The NUREG-5849 methodology specifies the collection of samples in "unaffected" areas surrounding the "affected" area. The "unaffected" area is typically a 10 meter area surrounding the "affected" area.

   The Plan as submitted does not indicate that any samples will be taken in areas surrounding the site creek where remediation took place as means of assuring the areal extent of the remediation was adequate.