

September 11, 1996

DEPARTMENT OF
ENERGY6474
96-0139

Margaret Megehee
Trojan Nuclear Plant
71760 Columbia River highway
Rainier, OR 97048

Dear Ms. Megehee,

On August 27 and 28, 1996, the Oregon Office of Energy and Oregon Health Division, Radiation Protection Services, performed a joint inspection of the Independent Spent Fuel Storage Installation (ISFSI) site survey. The inspection reviewed survey practices and procedures, and samples were taken to verify that your survey was adequate to demonstrate that the planned ISFSI site can meet the Council's free release criteria prior to the transfer of spent fuel to dry storage. As a result of our inspection activities, we have the following comments:

1. In the Affected area (the area formerly occupied by the Radwaste Storage Annex), 100% surface scans were performed using a CM-11 detector. The detector used bottled P-10 gas. The detector was calibrated at approximately 20 degrees centigrade prior to the survey, and a source check was performed every morning. Since the operating temperature during the survey, which was in the direct sunlight, was up to 15 degrees centigrade greater than the temperature at which the calibrations were done in the laboratory, and there was no calibration check with a radiation source in the field, did the heating effect in the gas bottles affect the efficiency of the CM-11 detectors?
2. We noted that the soil sample locations are identified according to their location on the site survey map (page 3 of the survey plan). Pursuant to the plan, there are only indirect ways to identify the absolute location (i.e., by Township, Range, minutes and seconds) of samples. Your system of identifying soil sample locations is acceptable, but does not provide an absolute location, which could be helpful in the future, particularly if the survey's validity is challenged. We suggest you consider some method of providing an absolute location for soil samples and survey measurements.
3. We reviewed calibration procedures for the intrinsic Germanium detector and gamma spectroscopy system. The calibration standard used to calibrate this system is lower in density (1.15 g/cc) than the soil that is being analyzed (over 2 g/cc). This will result in reduced

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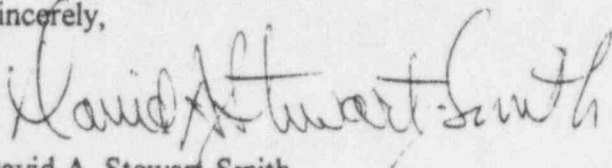
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detector efficiency, especially at low energy levels. Does this have any significant effect on the samples you are analyzing, and if not, why not? The inspection also noted that a daily check of the energy calibration and the peak resolution (FWHM) was being performed. You should consider allowing the gamma analysis system to go through the quantification of radionuclides in the standard on some frequency as well. This will serve as a more complete system check. We noted that when the system was recalibrated with a new gamma standard in the spring of 1996, the apparent detector efficiency at very low energies (Co-57) was considerably different than three years earlier. This may be due to detector instability after not being used for nearly three years. If detector efficiency has drifted in the meantime, such a periodic analysis of the standard will pinpoint the problem.

4. The Health Division survey showed that there appeared to be a significant increase in background (up to 2 times) at the corner of the fenced area opposite the corner of the spent fuel building. This is not unexpected. However, using the decommissioning plan criteria and current waste inventory, there should be a correction calculated. This would show that survey measurements in this area are in part due to the influence of waste storage, and will not be considered the background against which final site release will be based.

Please respond to these comments. If you have any questions regarding this inspection, I would be happy to discuss them with you.

Sincerely,



David A. Stewart-Smith
Administrator, Energy Resources

cc: Larry Rocha, PGE
Steve Quenoz, PGE
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