[2] What are the distances from each edge of the UBC pad to the site boundaries that were used in creating table 4.12-1? Place in table 4.12-1.

ANSWER: The distances are 1576 ft (north), 2200 ft (south), 737 ft (east), and 1790 ft (west). These distances have been added to Table 4.12-1.

[3] In the revised table 4.12-1, the dose rate to the nearest business appears to have increased by two orders of magnitude (was 10^{-5} now 10^{-3}). Please explain this change.

ANSWER: Numerous factors contribute to the difference noted in magnitude between the initially estimated dose rate values to the nearest business, located NNW of the site, and the current estimated dose rate values based on the expanded UBC Storage Pad. The <u>original</u> calculation (32-2400507-00) utilized an extrapolation scheme to estimate the dose rate to the nearest business that was based on a composite curve constructed by using the maximum total dose at any given distance from the edge of the pad (from either side). The line used to extrapolate to the nearest business is based on a linear trend/regression type between two points, as illustrated in Figure 1 below. The total dose rate at the nearest business is also estimated based on an extrapolation scheme in the <u>current</u> calculation (CALC-S-00141, Rev. 1) representing the expanded UBC storage pad. The extrapolation scheme is based on the power trend/regression type from three points of the curve representing the total dose rate from the north side of the pad as illustrate in Figure 1 below.
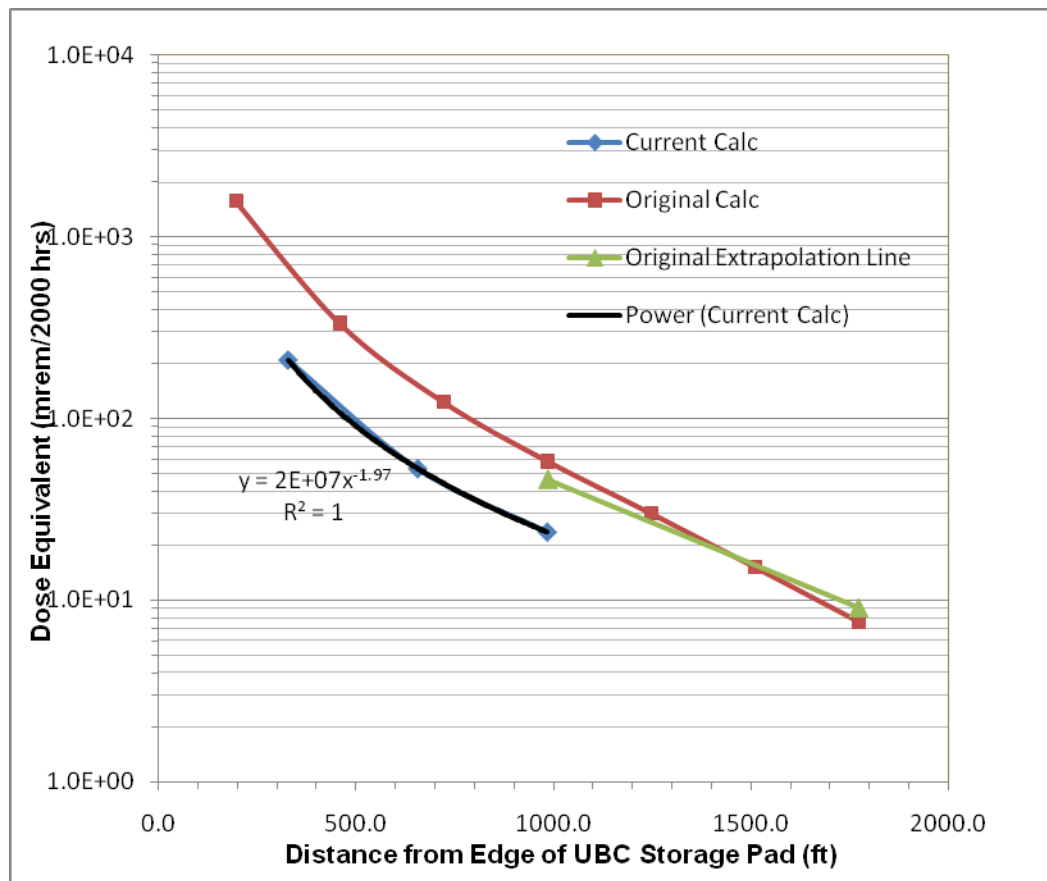

Figure 1. Comparison of Extrapolation Schemes of the Original and Current Dose Rate Calculations

Figure 2 illustrates the extrapolations of the dose rates to the nearest business location of the original and current dose rate calculations. Due to the differences in the slope of the dose rate curves (caused in part due to differences in the pad footprints and a double stack [original calculation] versus triple stack [current calculation] cylinder arrangement) and selected extrapolation scheme, the current dose calculation produces a higher dose rate estimate at the nearest business location/distance.
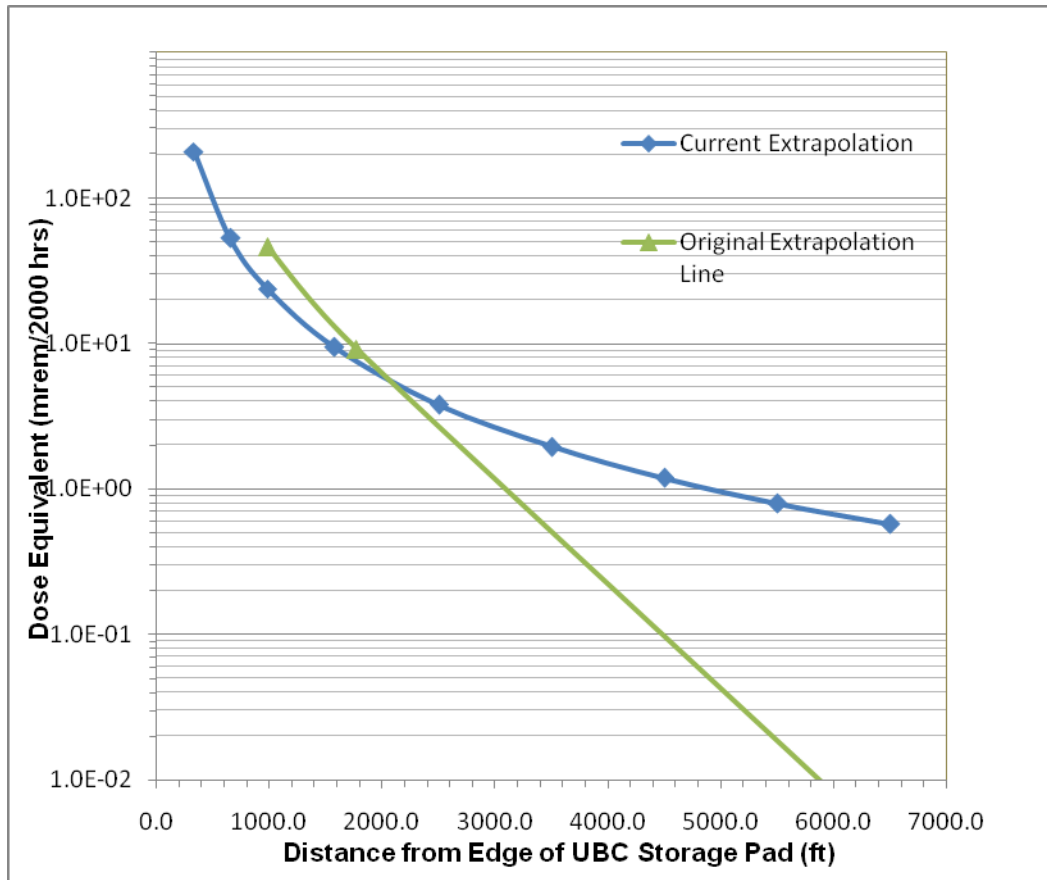

Figure 2. Differences in the Extrapolation of Dose Rates to the Nearest Business in the Original and Current Dose Rate Calculations

It should also be stated, for transparency, that the reason for the higher initial dose rates of the original calculations (based on approximately 15000 cylinders) compared to the current calculations (based on approximately 25000 cylinders), as shown in Figure 1, is due to the bias and uncertainty terms applied in the original calculation (32-2400507-00). These terms were removed in the current calculation (CALC-S-00141, Rev. 1) based on the justifications of improvements made to the newer version of the MCNP code along with supporting measurement data.

[4] In the revised table 4.12-1, the dose rate to the nearest resident appears to have decreased by a factor of 40. Please explain this change.

ANSWER: The nearest resident is located in the west direction of the site. The original calculation (32-2400507-00) utilized the composite curve (based on the maximum dose rates

at any given distance from the edge of the pad illustrated in Figure 1) to extrapolate the dose rate value at the nearest resident location. In the current calculation (CALC-S-00141, Rev. 1), the extrapolated dose rate values are based on the west side (e.g., short side) of the UBC Storage Pad per extrapolation scheme shown in Figure 3.
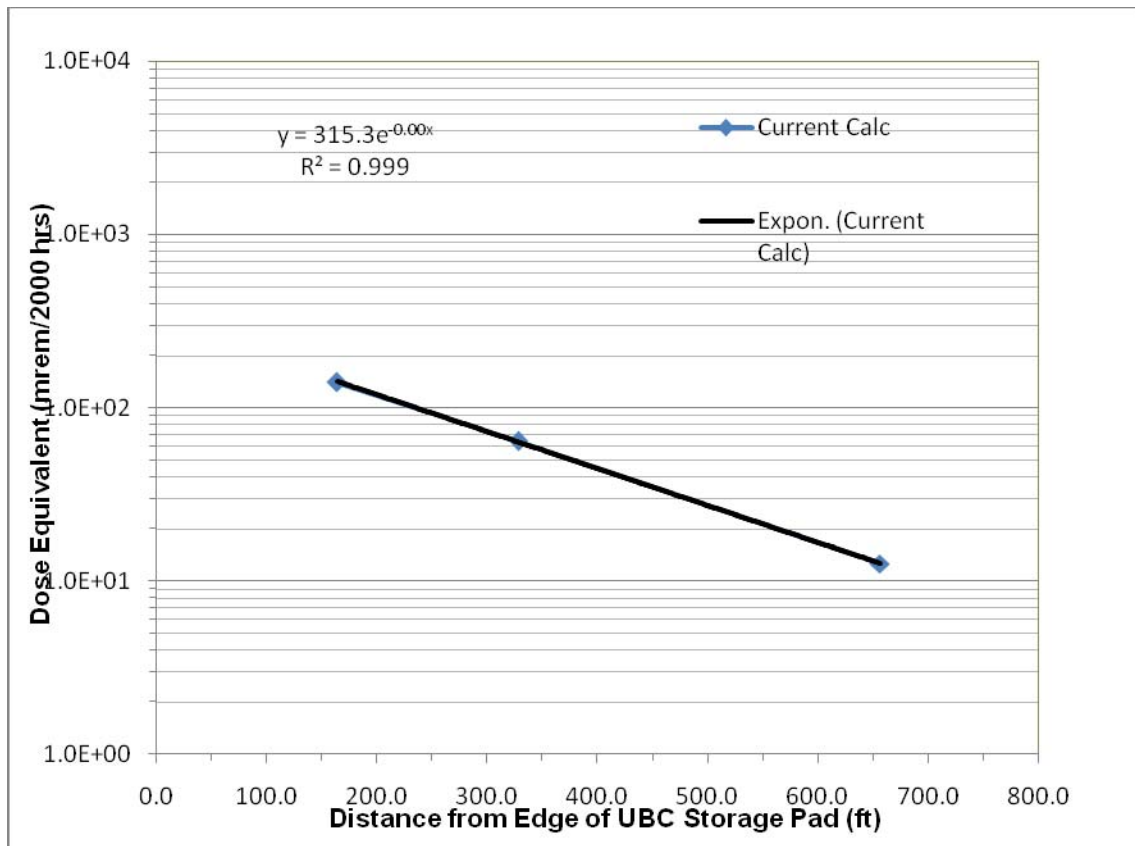

Figure 3. Extrapolation Scheme Used in Current Calculations (CALC-S-00141, Rev. 1) for Dose Estimates in the West Direction of the UBC Storage Pad

It must be emphasized that the value presented in Table 4.12-1 was mistakenly based on the 1.17 mile distance (representing the nearest business) and not the 2.63 mile distance to the nearest resident. When adjusted, it was noted that the estimated dose rate based on the 2.63 mile distance and full-time occupancy (8760 hours) reduced significantly, as expected, to a value on the order of <4.0 E-27 mrem/yr. The public and the nearest resident, the value in Table 4.12-1 has been updated to reflect the dose rate estimate based on the dose profile.

[5] In table 4.12-1, the business to the NNW (1.17 miles from the center of the site) is listed as the nearest business. The original LES EIS lists businesses to the south as closer (0.95 miles from the center of the site). Please provide the distances to all near businesses. Please explain why the business to the NNW was chosen. (e.g. does it receive the highest dose?)

ANSWER: In the original LES EIS the business to the NNW (1.17 miles, bearing 327.74°[1]) was identified as the nearest business from the center of the site for the purpose of determining that the dose equivalent at this location is within the acceptance criterion [2]. While there may have been closer distances identified from the center of the site to a

business in other directions (e.g., south), the overall distance from the edge of the UBC Storage Pad remains the shortest in the north direction. In addition, there are no structures impeding the particle/radiation travel 'path' in the north direction, which also stimulates the highest dose equivalency in this direction/location.

With the proposed expansion of the UBC Storage Pad, the distances to the nearest businesses has been revisited and are presented in Table 1. For conservatism, the distances are based on the nearest business property line and not the receptors of concern/buildings located on the property.

Table 1. Distances to Nearest Business Property Line from the Nearest Edge of the Proposed Expanded UBC Storage Pad

Business	Distance from Closest Edge of the UBC Storage Pad
Wallach	0.3 miles (1584 ft) North
Sundance	0.75 miles (3960 ft) North
WCS	0.66 miles (3485 ft) East
Lea Co Landfill	0.66 miles (3485 ft) South-East

Table 4.12-1 has been updated to reflect these changes and the distances along with the corresponding annual dose equivalent.

References

[1] "GPS Coordinates at Various Locations Near the NEF Site", Framatome Document No. 51-2400564-00.

[2] "Dose Equivalent from the Uranium Byproduct Cylinder Storage Pad" Framatome Document No. 32-2400507-00.