Class A West ALARA Evaluation

I. Worker Radiation Safety

a. External Dose

1. R313-15-201. Occupational Dose Limits for Adults

The chemical, physical and radiological composition of radioactive waste proposed for disposal at Class A West are consistent with current waste composition at Class A and Class A North embankments. Clive radiation workers are consistently below all legal dose limits (total effective dose equivalent) and effectively controlled within the Clive Radiation Safety Committees' (RSC) goals. Therefore, the Clive Radiation Protection Program will need no revisions for this Class A West disposal embankment.

b. Internal Dose

1. R313-15-204. Determination of Internal Exposure

Clive radiation workers are consistently below all legal dose limits (total effective dose equivalent) and effectively controlled within the Clive RSC goals. Therefore, the Clive Radiation Protection Program will need no revisions for this Class A West disposal embankment.

II. Environmental

a. R313-15-301. Dose Limits for Individual Members of the Public

Air pathway dose evaluations were re-evaluated at the Clive site in March and April, 2005 using the computer code PATHRAE. PATHRAE is used to conduct dose evaluations by evaluating atmospheric transport of particulates that are resuspended from exposed waste piles and during off loading and placement operations. Based on the results of this evaluation, compliance with the 100 mrem/year and 2 mrem in one hour to a member of the public is within the capabilities of the current Environmental Monitoring Plan and the Clive Radiation Protection Program. The uncovered radioactive waste limit specified in license condition 11 will remain the same under this amendment request.

b. Effluent Constraint Limits

As described in II.d. below, compliance with the 10 mrem/year constraint limit to the general population is within the capabilities of the current Environmental Monitoring Plan and the Clive Radiation Protection Program.

c. R313-25-19. Protection of the General Population from Releases of Radioactivity

As described in II.d. below, compliance with 25/75/25 mrem/year dose to a member of the public is within the capabilities of the current Environmental Monitoring Plan and the Clive Radiation Protection Program.

d. Air, Groundwater and Soil Environmental Stations

The chemical, physical and radiological composition of radioactive waste proposed for disposal at Class A West are consistent with current waste composition at Class A and Class A North embankments. Quarterly environmental reports document that radiological data, both radiation and effluents, are consistently below regulatory requirements and ALARA constraints.

Existing groundwater wells GW-81 to 86, GW109 to 112, and GW-137 to 141 are located within the embankment footprint and will be abandoned prior to liner construction. Collection lysimeters CL-W3, CL-W4, and CL-N5 will also need to be abandoned prior to liner construction.

e. Haul Route

The haul route used to transport waste from Rotary Dump, Truck Unloading dock and Intermodal Unloading facility will be similar to current haul routes with no expected adverse changes to radiation dose and effluents from the RA.

III. ALARA Program

a. The current Occupancy Factor (OF) for the Clive RA, as approved by the RSC, is 25%. There are no changes necessary to this OF for the Class A west amendment.

b. The objective of the current Clive Radiation Protection Program and the ALARA program procedure is to ensure that all reasonable actions are taken to reduce radiation exposures and effluent concentrations to levels that are considered ALARA. The waste type and classification that will be disposed of in the Class A West embankment will be no different than waste currently being disposed of in the Class A and Class A North embankments. Therefore, the ALARA Program will not require revision for the Class A West embankment.

Clive Radiation Safety Committee Concurrence: Allan Gunthsen 4/8/2011