

DC Remedial Action Schemes (RAS) Upgrade Project
(Project #: TFY090229)

This project will upgrade and replace the DC RAS Controllers A and B, located at Celilo, with new individual controllers at Dittmer and Munro Control Centers. It will replace old DC RAS transfer trip (TT) equipment with new equipment, using digital communications and digital compatible TT equipment where possible. The RAS logic will be analyzed, optimized as required to address the nature of the new solid state converters. These changes will be re-implemented on the new standard RAS controller platform. Where possible, equipment, design and programming similar to that used on the recent AC RAS Controller replacements will be used.

This project insures that the DC Intertie can continue to operate at full capacity of 3100MW with the support of a reliable and maintainable DC RAS system. The use of the DC RAS in general is critical to maintaining stability in the WECC interconnection. Failure of the DC RAS would cause the DC Intertie North to South loading to be limited to 1300MW a significant reduction from its full capacity.

The DC RAS controllers at Celilo were originally installed in 1988. There are no new spare parts available for the controllers and some of the spares have passed the end of their dependable shelf life. Due to their co-location at Celilo the controllers have experienced common mode failures. The controllers have reached the end of their useful life and if not replaced, BPA will be exposed to an increasing risk of DC RAS failure and a de-rating of line to 1300MW.

This project is expected to be completed by November 30, 2012. The direct capital cost of the project is expected to be \$11.8 million and with distributions (loadings, overheads and AFUDC) it is expected to be a total cost of \$16.9 million. The primary benefits are maintenance costs savings due to co-location with the AC and West Side RAS controllers at Dittmer and Munro, reduced training costs at Celilo, increased depth of support staff, increased spare parts availability due to use of same hardware that is currently maintained at Dittmer and Munro and location at the control centers that offer a more stable physical environment for the electronics.