

Result #8: Southern Intertie Operating Cost Savings Are Modest but Significant

- ◊ Most of this savings appears to be a reduction in fuel costs due to the increased ability to use Bradley Lake hydro power at peak hours, when it replaces the most expensive thermal generation
- ◊ Operating cost savings to all Railbelt utilities would be on the order of \$1,000,000 per year in 2005
- ◊ However, this savings is limited by the fact that the number of peak hours when savings can be obtained is relatively small, and because the thermal units used in peak hours are not that much more expensive than the shoulder units
- ◊ There is also some savings in spinning reserve costs and transmission losses



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All available Bradley Lake hydro energy will generally get used, with or without the Southern Intertie, the main question is when. The major energy production benefit of the Southern Intertie is the ability to deliver more Bradley Lake energy to Anchorage during peak hours, when it could replace the most expensive thermal production.

Our operating benefits are significantly less than previous studies, including the 1989 DFI work. The previous work was quite different from ours in that it built separate small models for each source of operating savings (energy, spinning reserve, hydro use, transfer losses) in isolation for the others. We believe our comprehensive approach is much more accurate.

We assume the Northern Intertie will be built in all cases, so we did not need to look at any operating benefits of the Northern Intertie.

Chugach Review Comment -

Fuel savings are understated because of load representation (page 15) and effective capacity (page 17). The model misses many occasions of transmission constraints. Due to the "effective capacity" approach for generating units used by ATLAS, the model understates power transfers in any given demand segment percentile. The result is a misrepresentation of power flows, economic dispatch, and associated production costs.