

Why the increased rating of Avista's Noxon-Pine Creek 230 kV line does not allow BPA's to move more generation out of Libby

The generation cap at Libby is due to a "local stability limitation". This means that the problem is not with line loading. A stability limitation means that a single contingency, such as generator loss or a line trip, could cause blackouts or worse in the local area, due to the inability of the system to stay together in the event of such a contingency. Catastrophic instability includes things like under-frequency, over-frequency, and voltage collapse. Voltage collapse can be worse even than blackout, since it can result in destruction of motors and sensitive equipment connected to the system, and even possibly cause fires. The current generation cap minimizes the chances and impacts of this sort of instability event.

The Avista Noxon-Pine Creek upgrade is attributed to an "aerial survey", meaning the up-rating is largely a formality of the rating approval process, and that the physical characteristics of the line have not changed. Most likely the aerial survey was conducted to see whether additional line sag due to heating from increased line loading would cause a problem, i.e. whether the corresponding thermal expansion of the heavily-loaded line would cause it to sag too close to trees, roads, etc. The rating process merely gives Avista permission to increase loading on an otherwise unmodified line. Since the line's electrical characteristics do not change, the model used to determine stability at Libby does not change, and therefore the generation cap cannot be changed due to this line re-rate.