SYSTEM TO INCREASE CAPACITY OF LNG-BASED LIQUEFIER IN AIR SEPARATION PROCESS

ABSTRACT OF THE DISCLOSURE

A system is set forth to increase the capacity of an LNG-based liquefier in a cryogenic air separation unit wherein, in a low production mode, the nitrogen that is fed to the LNG-based liquefier consists only of at least a portion of the high pressure nitrogen from the distillation column system while in a high production mode, a supplemental compressor is used to boost the pressure of at least a portion of the low pressure nitrogen from the distillation column system to create additional (or replacement) feed to the LNG-based liquefier. A key to the present invention is the supplemental compressor and the associated heat exchange equipment is separate and distinct from the LNG-based liquefier. This allows its purchase to be delayed until a capacity increase is actually needed and thus avoid building an oversized liquefier based on a speculative increase in liquid product demand.

Figure 1a