

## Centrifugal Compressor – Part 5

Penulis:

Cahyo Hardo, Premier Oil Natuna Sea BV - Sr. Site Process Engineer

Several stand-by wells must be opened to cover demand as per buyer's request. These wells are associated-gas, means produced from oil wells. Normally, what operation crew did is close monitor of oil processing facilities to ensure the system is ready to accept additional oil and water load.

Centrifugal compressor, normally "happy" to received additional load as long as his NGP (gas producer speed) are still adequate, as long as his inferential combustion temperature (T5) are far from shutdown point, as long as additional load did not cause hi-hi pressure on the suction.

Several wells opened, moderated flow but some of them have high flowing temperature. My operator suggested opening well slowly, and priorities for well that have lower flowing temperature.

I did not see a point for this reason, and then by order, please speed up opening the wells.....

And soon, compressor notice one alarm, high discharge temperature.....

Suction temperature is not normally has shutdown setting command on the compressor, but for discharge side.

Then I appreciated what my operator said, basically he understands about what we called in thermodynamic term, "adiabatic compression temperature". For the same pressure ratio, higher temperature at inlet compressor, off course cause higher temperature on discharge side.

As my mother said, " Tersandung itu sama batu krikil 'Yo, dan bukan kerakal"...  
I believe now....

Reference:

Cahyo Hardo, "Day-to-day activities to keep plant running", Anoa-AGX Platform, South China Sea.