

Anexo Respuesta de Licenciante (UOP) de la Unidad respecto de línea de bypass.

RV: [External] Nueva hora propuesta: ENAP- ERA: FCC Call



González Rincón, Tulio (Enap Refinerías)

Para Bezama S., Orlando (Enap Refinerías)

CC Reeve Valenzuela, Jorge (Enap Refinerías)

Responder

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Tulio,

I wanted to summarize what was discussed in our meeting on Monday, May 24th, and also provide some additional comments.

We discussed the current situation at ENAP with the Flue Gas Diverter Valve. Currently the unit is running with the 8" bypass line and a large amount of flue gas flow is being sent to the bypass stack. ENAP is being asked to evaluate and capture the amount of emissions coming from the bypass stack. Due to the large line size of the bypass line, it is safe to assume there is a large flow going to the bypass stack but no way to define the amount or the emissions due to no flow indication and no analyzer on the bypass stack.

Depending on the Diverter valve vender, the diverter valve is designed to allow a small leakage rate of the flue gas through the diverter valve into the bypass stack. For most refiners, this leakage rate is sufficient to keep the bypass stack warm such that there are no problems when the diverter valve diverts flow to the bypass stack. In addition, a small flow to the bypass stack is necessary to ensure that water that might collect in the bypass stack does not condense and either 1) cause cooler temperatures which can lead to possible avoid acid dew point condensation and cause corrosion issues and 2) avoid bypass stack refractory for taking up water and cause issues open routing flue gas through emergency stack and cause refractory failure issues.

UOP usually targets a temperature above 177 °C in the bypass stack to minimize any water condensation. UOP has seen customers install a TI in the bypass stack to target this temperature and help operations monitor this section. A lot of times the natural leakage rate of the diverter valve is sufficient to reach this temperature but sometimes a larger opening is required. With the current setup at ENAP with the 8" bypass line, there is much more flue gas than required going to the bypass stack which will be hard to track emissions. In addition, there is no analyzer on the bypass stack. Analyzers on the bypass stack are specified by UOP.

Since the 8" bypass line is installed and currently running, we would suggest blinding that line and installing a TI in the line to the bypass stack. We would suggest ENAP consult with the diverter valve vender on the leakage rate of the diverter valve and also confirm if they have calculations to approximate flow through the diverter valve based on opening. This way, ENAP can 1) reduce the total amount of flue gas to the bypass stack better controlling and monitoring emissions and 2) keep the line to the bypass stack warm to avoid any condensation and corrosion issues.

I had mentioned in my earlier correspondence about installing a smaller bypass line with an RO to help control the flow to the stack. Upon further consulting with UOP engineering, an RO could present challenges since the flue gas will have catalyst particulates which can cause issues. We believe the best option is what is detailed above in having a small opening in the diverter valve to the bypass stack. In addition, this would eliminate the need to add additional piping. Unfortunately any fixes to this issue will require a unit shutdown since there is no isolation on the bypass line. Since this is the case, UOP is more than willing to outline the best options for ENAP to ensure that when the unit is shutdown to fix the issue the necessary steps are taken for long term reliability and operation.

Please let me know if you have any further questions or comments.

Best Regards,

Edward Dobyne
Technology Services Specialist - FCC and Treating Technology Services
Honeywell UOP
25 E. Algonquin Rd., Des Plaines, IL 60017
Office: +1 302.501.2818