

From: Steve Noyes [<mailto:Steve.Noyes@JohnHCarter.com>]

Sent: Tuesday, March 22, 2011 3:57 PM

To: 'Gary Fransen'

Subject: RE: FOAM CONTROL APPLICATIONS

Gary,

The foam application you referenced is at DuPont/Dow Elastomers in LaPlace, LA, USA. They operate six Neoprene reactors (or kettles) where they react feed chemicals to produce pure liquid neoprene which is fed to their dryers and finishing process. In these kettles, the wrong chemistry or too much entrained air causes the reaction to foam (or bubble-up, as they call it). Undetected, the foam builds and begins to dry out into a sticky "popcorn-like" substance that builds up in the vapor space and relief valve piping, requiring the vessel to be taken out of service to be cleaned. The relief valve normally also requires maintenance and has been found after previous upsets of this type to become "packed with popcorn" creating an additional safety hazard.

你提到的泡沫应用是在美国 LA 的 DuPont/Dow Elastomers in LaPlace。在他们运营的 6 个反应器里，为了控制添加化学原料和干燥剂生产液态橡胶而使用了泡沫检测设备。反应器中错误的化学原料或者携带的空气使反应器起泡。这些泡沫形成之后变干燥，然后成为一种爆米花状的带有粘性的物质充斥在蒸发室与安全泄压阀门管线中，使车间不得不停止生产来清理这些泡沫。安全泄压阀在经过几次这种“爆米花泡沫”影响之后就需要维修，这给生产带来很大的安全危害。

We were able to reproduce this reaction in their lab and used the Agar ID-201 to detect the raw signal difference in their process sample foam (aqueous) versus air. The standard 7" coated antenna easily detected the presence of this foam. Based on those results, DuPont/Dow purchased an ID-201 for each reactor.

我们可以在实验室中复制反应器使用 Agar ID-201 探针来测量生产时空气与泡沫的原始信号。标准型探针可以很容易的检测到这种泡沫。基于实验结果 DuPont/Dow 为每个反应器安装了一套 ID-201 设备。

The ID-201's are used as switches that alarm in the control room when foam reaches the antenna. In alarm, the operators bring the level down in the reactor and adjust the chemistry to bring the foam level down to a controllable level, before they start "making popcorn". I remember being told that they don't introduce a de-foaming agent. Instead, they change the process feed rates to eliminate the foam. I don't know how much of the correction process is automated, but think that some operator action is still required. In the first eight or nine months of operation, while I was still monitoring the application, the ID-201's detected foam on two separate instances and operations successfully eliminated the foam before they made popcorn in the reactors. I was told that the Agar installation paid for itself in maintenance and process unavailability savings in these two events alone. These systems have been successfully operating now for almost ten years.

当泡沫增加接触到天线时，ID-201 作为转换器向控制室报警。报警后，操作员调整化学原料供给，在形成“爆米花”之前降低液面和泡沫位置。我依然记得他们说不希望使用除沫剂，而是控制原料供给速率来消除泡沫。我不知道生产自动化程度如何，但是很多地方依然需要人工操作。在我观察生产开始的 8、9

个月里，Agar 的 ID-201 分别在两个反应器里检测泡沫，成功在“爆米花”形成之前消除了泡沫影响。他们告诉我 Agar 公司独自负责了这两个应用的安装与维护工作。而且该系统已经成功运营了将近十年。

I'm not the regular salesperson for DuPont/Dow, so I haven't been there in a while. I do believe the original project engineer is still there & I'm sure I can get more details, if necessary. Please contact me with any questions or instructions you might have.

我不是 DuPont/Dow 的正式员工，所以我已经很长一段时间没有去过 DuPont/Dow 了。我相信原始项目工程师依然在那里，而且如果有必要我确定我可以得到更多项目细节。如果有任何问题，请联系我。

Good selling!

Steve Noyes

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