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TECHNICAL NOTE

CORRECTING HIGH ACID NUMBERS

BACKGROUND: A high acid number shows that the fluid has degraded, usually because of oxidation and/or hydrolysis. On the other hand a rising acid number suggests that the rate of degradation is exceeding the capabilities of the purification system.

ACTION: Slightly different actions can be required depending on specifics but in both cases the first step is to check the purification system.

1. Purification Media Changes

1.1 When was it changed last? If too long ago, schedule a change. The correct interval should be based on the OEM recommendations and site experience. For example, GE recommended fuller's earth changes at least every three months.

1.2 Was the change procedure correct. Check that there is flow, that the media is not air bound (crack open the vents), and that all the media was changed. For example, systems can have two, four, or eight cartridges or bulk media.

2. Purification System Flows

2.1 Check the pressure drops on the purification media and on the particulate filter. Too high a drop or no drop can indicate no flow. No pressure at the inlet can mean that the purification system is not getting fluid at all.

2.2 If there is flow, but a low pressure drop, this can mean that the media is being bypassed. Causes can include problems with the media, the cartridge gaskets or a relief valve passing. Ensure also that the gauges are reading correctly and that the relief valves are set properly.

2.3 The flow can be easily checked by running a line from housing vent or drain to a five gallon pail and timing how long it takes to get a gallon or so. GE systems can be 1 or 2 gpm depending on the number of cartridges and Siemens-Westinghouse systems can be 0.4 gpm if Selexsorb is used. Note: The OEM documentation is often dated or just wrong.

3.0 Purification Media

3.1 Was the correct media used and was it fresh. Many different types and grades are available so make sure that inferior ones were not substituted. Most media also absorbs water just sitting in stores and if older than six months or so might require drying. Consult your supplier.

3.2 Was the water level in the fluid too high at any time when the 'ineffective' media was in use? Again the media will absorb water so that it will not be able to control acidity.

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FACT FINDING QUESTIONNAIRE

Is this a recurring problem or a new one? Old ____ New ____

If the fluid was changed, how long ago? ____ What fluid is being used? _____

Fluid makeup in last year ____ drums. Is it all brand new fluid? Yes ____ No ____

1. Purification Media Changes

Change interval: ____ months Date of last change: _____

Average change interval over last year: ____ months

Check stores withdrawals: How many cartridges were taken out? ____ When?

Vent housings. Was there any air? Yes ____ No ____

2. Purification System Flows

Purification housing: ____ Inlet pressure ____ Outlet ____ Differential ____

Downstream Particulate filter: Inlet Pressure ____ Outlet ____ Differential

Have the readings changed in the last month? Yes, up ____ down ____ No ____

Is the relief valve passing? ____ Yes ____ No ____

What is the design flow? ____ gpm. What is the actual flow? ____ gpm

3. Purification Media

What media is used: _____ (i.e. fuller's earth)

Who is the supplier: _____ (i.e. Hilliard, Nugent)

What is the code for the cartridge: _____

How long has it been in stores: ____ months

For the media still in stores is the plastic wrapping still intact with no rips? Yes ____ No

Is the media dried before use? Yes ____ No ____

Was the acid number of the fluid above 0.20 mgKOH/g any time recently? Yes ____ No

Was the water content of the fluid above 1000 ppm any time recently? Yes ____ No ____

If there is a desiccant breather on the reservoir, has it been checked? Yes ____ No

4. Other

GE, Siemens-Westinghouse, Hilliard and Nugent are Trademarks of their respective companies.

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