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Fluid Testing Steam Turbine Control Fluid Sampling

It is important that fluid samples be taken at the same place each time, at the right time and using the correct procedures. This is necessary to collect a sample that is truly representative of the fluid in the system. Even a slight variation in sampling can have dramatic effects on the particle counts. Chemical and physical characteristics are less likely to be affected.

SUGGESTED SAMPLE PROCEDURE

1. Place a pail or tray under the sample valve to catch any spillage. If possible, do not use granular spill absorbent material that can dust.
2. If necessary, clean off the sample valve with a clean brush, clean control fluid or bottled air. Avoid using wipes or even 'lint free' cloths and do not use solvents unless they are all removed or allowed to air dry. In dirty areas keep the sample bottles in plastic bags.
3. Open the bottles to be used for flushing and the sample bottles. On clean sheets of cloth or paper, set the flush bottles to one side and the sample bottles to the other side. Also on the sheets, set the caps top down beside the bottles taking care not to mix the caps for the flush bottles and sample bottles. Alternatively, keep the cap(s) for the sample bottle(s) in one hand.
4. Open the sample valve slowly and then more fully purging 1 L (~ quart) of fluid into a flush bottle or bucket. ***Without touching the valve put a final sample bottle under the flowing fluid steam and fill it about 7/8 full.*** Do not overfill.

If a second sample is required slide this bottle into position without adjusting or even touching the sample valve or any tubing. For routine testing send 500 ml (~ pint).
5. At the end of filling the last sample bottle, slide the flush bottle back into position. ***Only then close the sample valve.***
6. If it is not known whether the sample bottles were clean or if the sample valve was touched by mistake, cap the sample bottles, shake them and then properly dispose of the fluid. Also empty the flush bottle and repeat 4 and 5 ensuring that the same bottles are used for flushing and sampling.
7. Cap the final sample bottles and properly dispose of fluid from the flush bottles along with fluid in the pail and/or tray. Do not add to new fluid drums.
8. Label the sample bottles or sheet with the fluid name, station name, unit number, sample point, date, time and sampler's initials.

Comment: To verify the sampling procedure, at least initially, take a series of samples one after the other and only test for particle counts. When the counts level out then enough fluid has been flushed. To show the importance of not touching the sample valve include the one at the start and then at the end when the sample valve is closed.