PLAINTIFF'S EXHIBIT

ET-23

S.O. 7402
Type 2-EC-13
Rating 7500 KW @ 3600
400#-750-2" Hg.Abs.

This turbine governor was originally purchased by Girdler Construction Company for Northern Chemical Industries at Searsport, Maine. Presently, it is on a five year lease to Chemetron Corporation.

The generator is used to supply plant power for the neighboring Northern Chemical Industries plant and also load consumed at Chemetron. The generator is not operating in parallel with any other power supply, only a small limited tie is maintained with Central Maine Power for limited plant operation in case of emergency.

Since the original start-up of this unit (March, 1956) there have been periods of "hunting" experienced when the electrical load was such that the governor valves were near a cut-in position. But due to the nature of the plant, an almost steady 7000 KW has been maintained which is about mid-way up on #4 valve. When the load forced the cam near a cut-in position and the hunting started, customer would reduce steam pressure to change the cam position. This went on for quite a few years and with each overhaul, an attempt was made to correct the hunt. The amplitude of the hunt was approximately .2 cycle.

The plant is presently coming out from under a very lengthy labor strike and is presently operating at very light loads. The electrical load is approximately 1000 to 1200 KW and will remain this way until the end of January, 1961 when the load will resume to approximately 7000 KW. With the light load, customer could not reduce the hunting by lowering initial pressure and called for service.

Elliott serviceman uncovered severe wear on the cam shaft journals and metalized the journals to size. Also replaced the gear segment and pinion, which showed over 1/8" wear on several teeth. Several rod ends on the servo-motor linkage were replaced and the unit placed back in service. The hunt persisted and this writer went to assist the serviceman.

The unit was secured upon arrival and the cam follower assemblies for #1 and #2 opening valves were removed along with the valve closing springs. The crosshead on the #1 valve had galled at one time and all of the nuts locking the valve stems to the crossheads were of the commercial nut variety and not of the recent design, that of a specially faced nut perpendicular to a chased thread. The nuts were all changed, the crossheads all freed. All valves, when locked with jam nuts, were then free. The valve settings were all checked and reset to the valves as given in the instruction book. The hunting had loosened the pinned connection between the cam follower assembly and the connecting link to the crosshead on #1 and #2 valves, so these two crossheads were placed in #6 and #7 valves, as the turbine has 60% excess flow, and under plant's heaviest load, #5 valve is still seated.

A few other corrections were made in the servo-motor linkage and the unit was brought up to speed December 15, 1960. It came on governor and speeds were checked okay. After the first over-speed test, the unit came on the governor at the minimum speed setting and proceeded to climb in speed until #1 valve was tapped with a hammer. This brought speed down to minimum speed governor setting. The servo-motor meanwhile, had over-traveled, attempting to correct the speed rise.

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