S:\engineer\results\950MW_Operation.wpd

950 MW Operation

VAR support + convertor station
what provisions need to be met for 2 Units at 950MW gross

Maximum Steam Flow Limit - how do you control and limit maximum steam flow limit of 6,900,000 lb/hr. Safety Valves (main steam, drum, cold reheat and hot reheat) do not relieve until an overpressure condition, essentially we no longer have an overpressure condition available.
Alarms: If we do have a pressure excursion and lift safeties, we will have far exceeded our steam flow limit.

Suction Pressure Override
limit needs to be raised up
Limiting factor during test - unstable furnace suction pressure due to ID fan limit

Baghouse - low differential pressure indications problem
need to rescale transmitters (inlet and outlet duct pressure)
Range dropped below -15" wc and -20" w.c., so D/P defaulted to 5" wc (actual measured at 7.5" w.c.)

Vibration - BFPT U2 B - evaluate balancing during

ID fans - evaluate high speed balancing

Station Instrumentation - temperatures
main steam + Hot Reheat temperatures are off 4 to 5 degrees
investigate calibration offset to be applied to data acquisition system

IP7010209

limiting
(maximum tube metal temperatures)

Main Steam sprays. ~~Evaluate~~

Evaluate changing main steam spray control where primary (first stage) sprays will limit ~~maximum~~ maximum tube metal temperature of secondary platens as well as secondary superheat intermediate and outlet periods

~~[illegible]~~

Equipment

Turbine Operation

sliding pressure - 2350-2375 psi
no overpressure condition is allowed, would exceed maximum steam flow.

Booster Boiler feedpumps -
requires 3 pump operation (versus 2 pump)
(low differential pressure alarm)

PA fan during this test which was abnormal
(6 pulv operation, PA duct press at 47" wc)
close to running out of PA damper position
Before we can reduce PA flow and use high speed operation for bad coal
Reduce PA flow requirements -
1) Reduce PA flow through pulverizers (new target)
2) Recalibrate at burner lines versus PA inlet duct to pulv
3) Rebalance burner lines with restrictors
4) Primary Air Heaters - look at reducing seal leakage across primary air heaters at the minimum reduce seal clearances to OEM recommendations

ID fan links - overcurrent alarms on numerous ID fan links

Auxiliary Power - 2A2 + 2B2 Aux buses low voltage sagged to 6400 Volts

IP7010211

Boiler feed pump modification U2 B

Upgrade looks good, but still need to conduct preformance test at specified conditions

Burners/NOx Requirements

Need to replace U2 burners due to pre-existing mechanical damage (Unit 1 Burners have already been replaced). Replacement needs to be with Unit 1 redesign or a better equivalent. Would highly recommend installing overfire air ports to give more operational flexibility to achieve lower NOx emission rates (0.40 lb/mbtu?).

Boiler Tubes - additional Superheat Surface Area

During the performance test, we were able to achieve Main Steam and Reheat temperatures without a lot of problems. We had a lot of reheat temperature and RH bias dampers were at minimum of 40%.

Due to the expense of additional primary superheat surface area and not a huge payoff of additional Main steam temperature, we suggest - looking at additional ~~Main Ste~~ secondary superheat sootblowers as an alternative.

IP7010212

Pulverizer - Rotating throats

Pulverizer - Pyrites Removal system

Cooling Tower - helper cooling towers will be added and tied in to the system during spring 2003

Circulating Water Pumps - CWP upgrade will take place to increase circulating water flow. Impellers of all 7 CWP will be changed out and pumps overhauled

IP7010213

Additional Testing

HP Turbine Testing - 30 day test
target date 5/7/02 YWO | 2385 | 988 MW gross

Boiler feed pump tests. U2 B
target date 5/13/02

Air Heater Leakage Tests for Sec Air Heater
and Primary Air Heater
target date 5/22/02

IP7010214