

Interoffice Memorandum

TO (Name and Location) Mr. D. E. Lockwood	DATE November 2, 1979
FROM (Name and Location) S. K. Smith	REFERENCE NO. ED79-636-SKS

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#12 Boiler File

#12 BOILER SHUTDOWN DURING WEEK OF 11-4-79

The six Coen burners on #12 boiler are producing long and narrow flame patterns because of poor air-fuel mixing. As a result, several tubes have blistered due to flame impingement. To help investigate this problem, the following items need to be done during this shutdown:

1. Replace all of the hydrogen burner tips. The tips supplied by Coen (angled holes) should be installed on the lower north burner. All of the other tips will have straight (90°) holes. The tips should be installed with holes pointing radially out from the burner.
2. Remove existing diffusers in center of burners and install new 14-1/2" dia. diffusers. Adjust diffuser position so front of diffuser is aligned with front of methane gas ring.
3. Check angle of blades on turbulizers in burner throats. Blades should be at 45° to centerline of burner. Adjust to correct angle by bending.
4. Check seal between methane gas ring and boiler casing. This should be a gas tight seal using an asbestos gasket.
5. Check burner refractory throat size. Throat should be 27" I.D. at smallest point and approximately 40" I.D. at wall inside boiler.
6. Adjust air registers on all burners. Inner (lower handle) register should be set at six (6) and outer (upper handle) register should be set at four (4). These are starting positions and adjustments can be made after startup.
7. Install excess oxygen grid sampling system in flue gas outlet of boiler in front of air preheater.
8. Install a pressure tap in the boiler windbox near each burner to measure combustion air distribution.

These modifications should improve burner performance and/or help determine the overall problem.

SKS:ds

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