ASSUMPTIONS TAKEN FOR
THERMAL LOADING DATA CALCULATION OF 80" FLUE GAS LINE:

1. Design pressure is taken equal to absolute sum of max.(+ve) & min.(-ve) internal pressures to cover the whole pressure range.

2. Ceasor II defaults for SIF at miter were kept intact, although d/t is more than 100. This is due to unavailability of more accurate data.

3. 84" Expansion joints of "*Senior Flexonics Pathway*" are used in analysis for preliminary thermal loads on 80" line, yielding conservative results. This was due to unavailability of 80" Expansion Joint at the time of analysis. Design life cycle of EJs is taken as 7000. EJ oriented along z-axis has 10 convolutions; the other to be designed by "Senior flexonics Pathway" has 36 convolutions. Approximate weights for EJ are considered.

4. Hydro-test / Pneumatic-test cases not considered for thermal load calculations on 80" line.

5. Thermal flexibility analysis performed on Ceasor II don't cater for buckling analysis which gains importance in view of negative/vacuum pressures.

6. Wind direction taken at 0, 90, 180 & 270 degrees from North for conservative results. Actual wind direction was 300~330 degrees from North. The 3 second gust at 10 meter above ground was not considered.

7. Wind speed taken as 45 m/sec at all elevations in range 7~16 meters.

8. Thermal displacement of equipment nozzles are approximated values as the actual vendor drawings/data sheets were not available.

9. Seismic loads were not considered.

10. Nozzle allowables being unavailable were not considered.

11. Pipe material is API 5L, Grade B (11 mm WT, 1 mm CA)

12. Insulation thickness = 75 mm, Insulation density = 100 Kgf/m3

13. Thickness of spectacle blind = 175 mm

14. Thickness of 80" flange = 175 mm

15. Weight of 80" flange = 3800 Lbs.

16. Weight of Damper = 2 times weight of 80" flange