# 3.System Design Basis

동적 모사를 실행 하기 전에 동적 모사를 실행 하기위한
1) 목적이 분명 하여야 한다
   즉 설계를 돕기 위한 것인가,혹은 설계된 자료를 가지고 안전성의 확인을 위한 것인가를 분명히 하여야 한다.
2) MODELING의 범위를 분명히 하여야 하며
3) SCENARIO의 구성을 명확히 하여야 한다.

그러나 현실은 동적모사의 개념 이해 부족과,현장에서 한정적으로 이용되고 있고
,경험부족으로 위와 같은 사항을 간과 하고있다.

위와 같은 작업이 먼저 선행 되어야 동적 모사를 위한 WORK SCOPE 및 SCHEDULE을 확정 할 수 있다.

또한 필요한 자료를 수집할 수가 있으며 특히 동적모사에서는 필수적으로 필요한 구동기기 및 계장자료의 입수시기를 예측하여 미리 대비하여야 한다.
특히 기기에 대한 VENDOR 자료 및 배관에 대한 ISOMETRIC DRAWING,계장기기의 VENDOR 자료 및 CONTROL LOGIC DRAWING 및 OPERATION MANUAL이 필수적이다.

특히 정적모사에 대한 관련 자료가 필수적이다.
아래자료는 동적모사을 실행을 위한 참고자료이다.
The dynamic modelling are developed based on :

- PFD`s
  1718-0157 sheet 001 of sheet 003
  1718-0157 sheet 002 of sheet 003
  1718-0160 sheet 001 of sheet 002
  1718-0160 sheet 001 of sheet 002
- P&ID`s
  1718-0228-sheet 001 of sheet 002
  1718-0228-sheet 002 of sheet 002

  1718-0229-sheet 001 of sheet 002
  1718-0232-sheet 001 of sheet 001
  1718-0233-sheet 001 of sheet 001

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- Equipment data sheets
- Instrument data sheets
- Piping drawings
- Logic system information
- Process simulation report (Doc.No.1718-0027)
- Operation philosophy (Doc. No.1718-0012)
- Vendor Prints

2) All equipments are modelled using the standard HYSYS unit operation models.

3) Butane BOG compressors with butane storage system is modelled for this report.

4) Modelling have been included only the major equipment, major piping and major instruments and no ancillary piping or equipment that are not required for operation of the dynamic model.

5) For proper modelling of unit operations, a process stream or instruments that is not located on drawing were added to PFD model.

6) Models shall be validated against a steady state heat and material balance to within an accuracy of 5 % for key variables .

7) The inlet streams and out streams specifications for the butane storage tanks(T-1/2/3/4) with Butane BOG compressor unit(K-2501/2503/2504) operated at the holding mode at $52^{o}C$ ambient temperature as maximum vaporizing rate, and at the loading mode at $12℃$ ambient temperature as minimum vaporizing rate have been considered as modelling operation condition.

8) The heat gain due to the liquid circulation to keep loading lines was added to the heat gain of the each tank, because propane circulation system does not affect the propane storage system except heat load and this level of detail was not required for dynamic simulation.(Refe to table 4.3.1)

9) One butane separator, pump and control system for many butane tanks boil off condenser have been modelled, but one separator system for each butane tanks boil off condenser are showing in P&ID ,because this level of detail is not required for compressor dynamic analysis.