



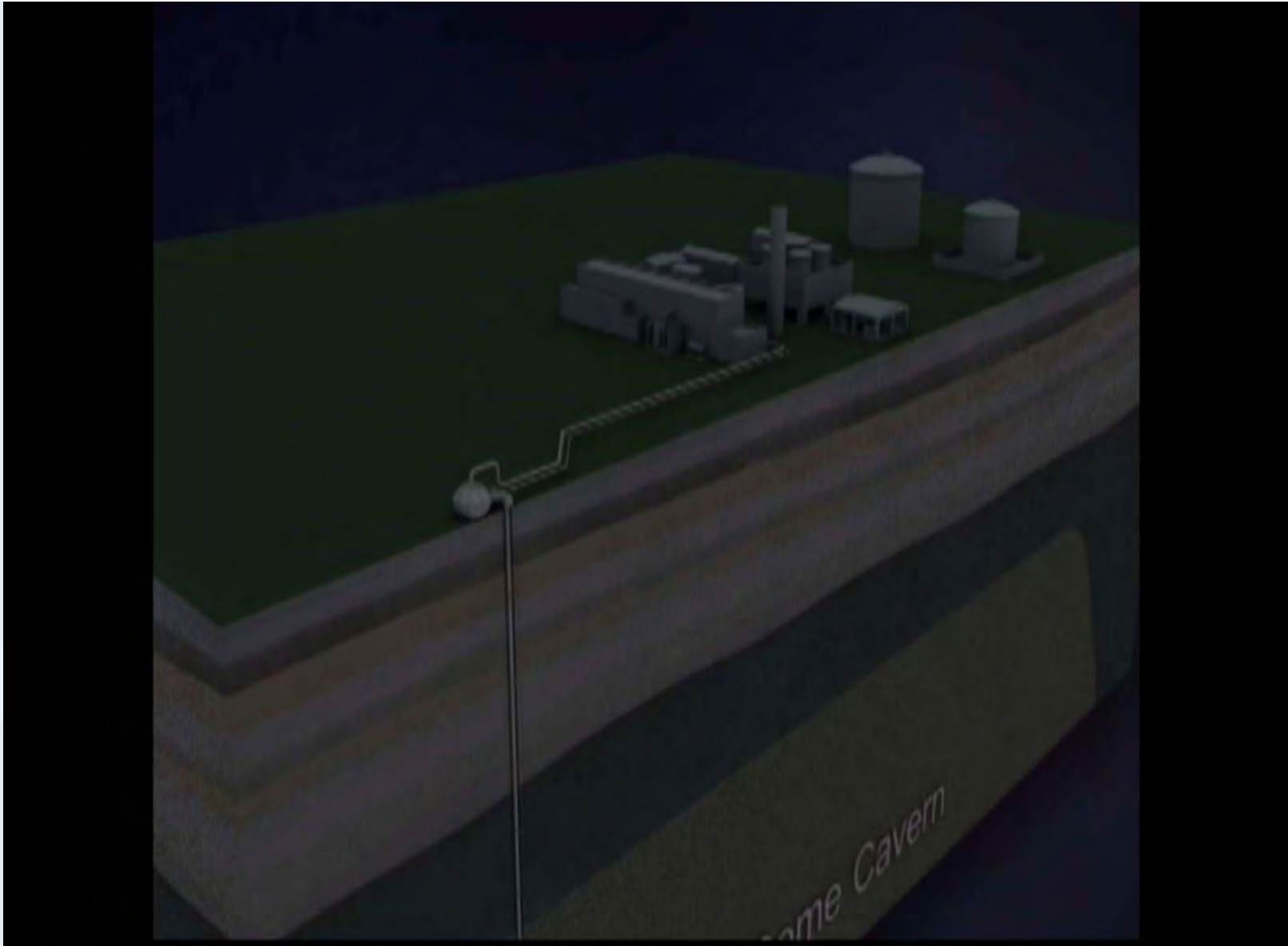
POWERSOUTH
ENERGY COOPERATIVE

The CAES Concept

- **Take off peak base load generation to compress air.**
- **Air is stored in an underground cavern.**
- **The stored air is then fired with natural gas to produce peaking energy.**

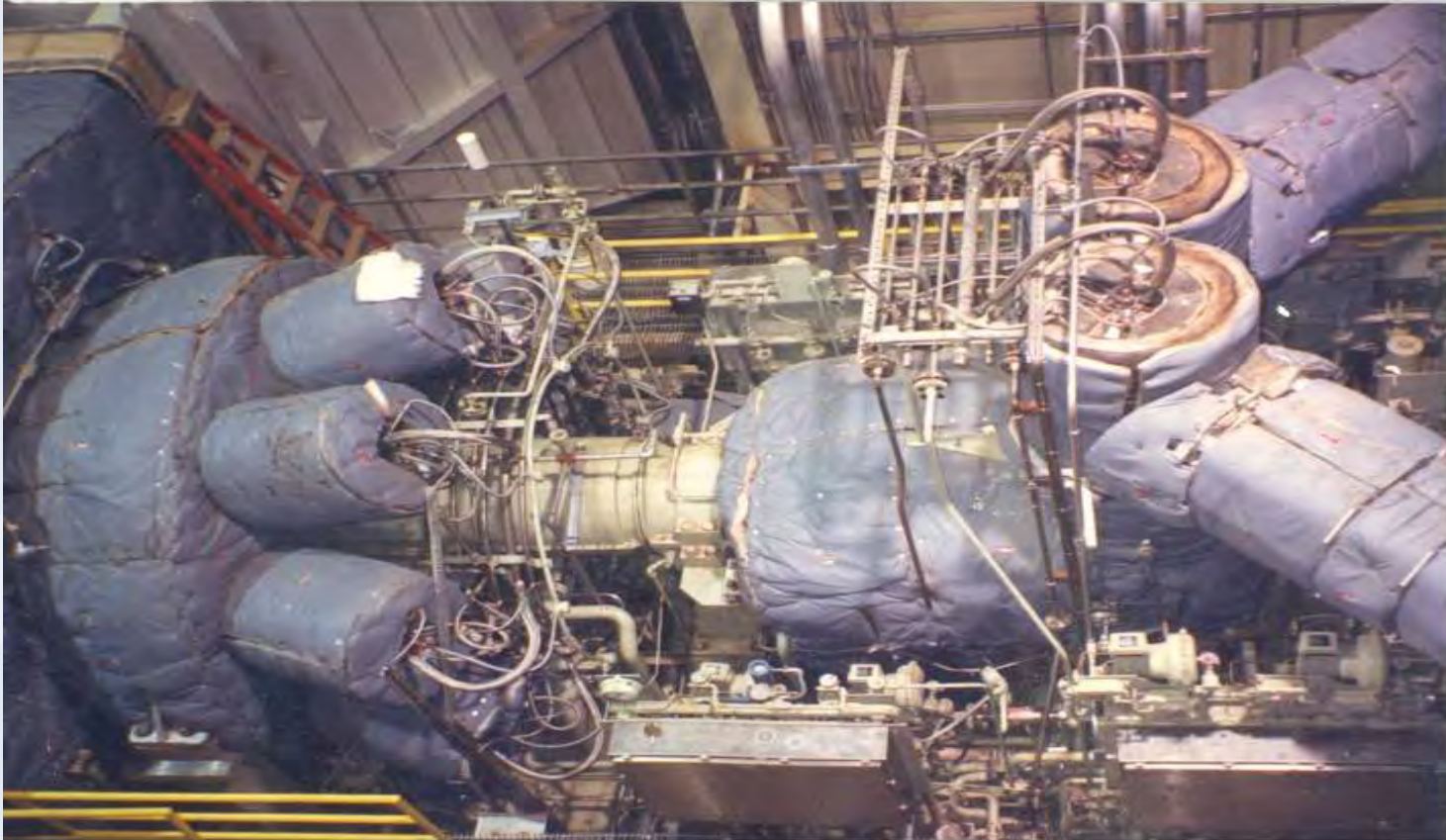


POWERSOUTH
ENERGY COOPERATIVE



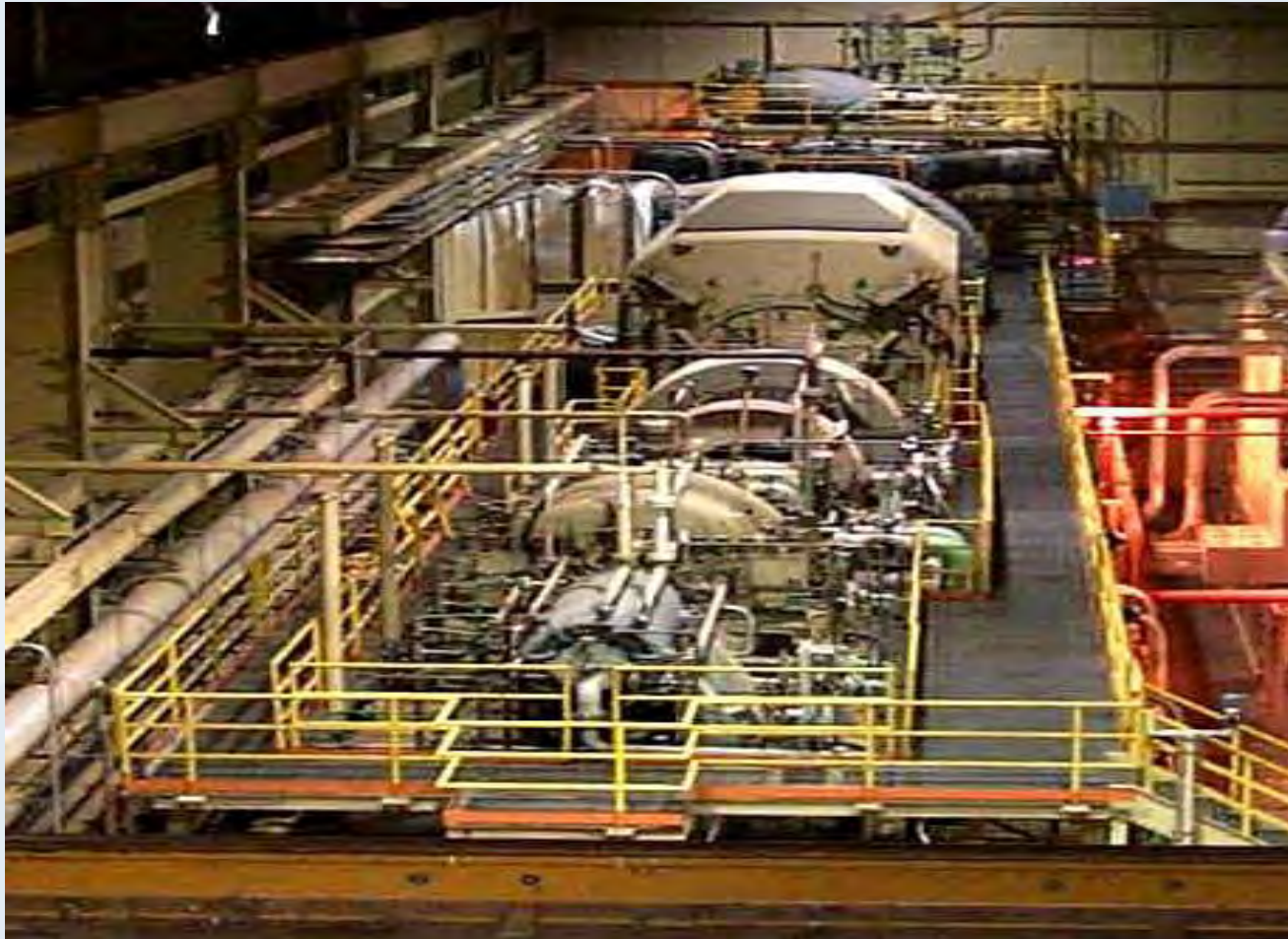
POWERSOUTH
ENERGY COOPERATIVE

Expander Train



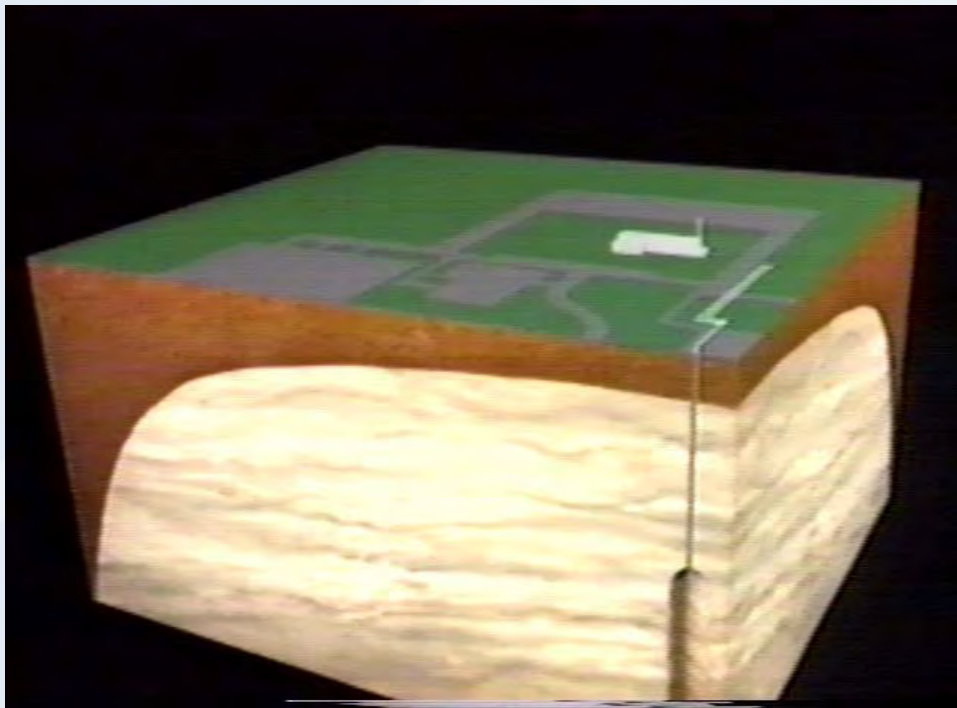
POWERSOUTH
ENERGY COOPERATIVE

Compressor Train



POWERSOUTH
ENERGY COOPERATIVE

The CAES Cavern

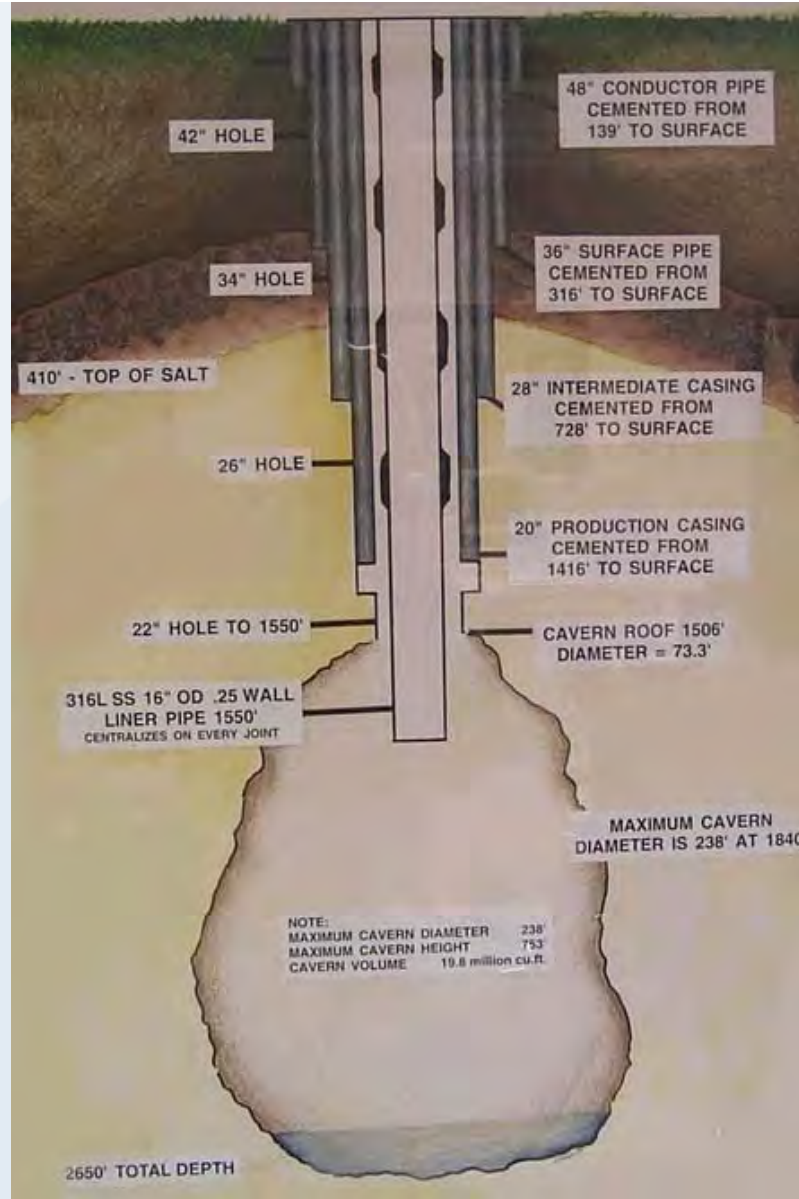


- 1500 feet to the top
- bottom
- 2400 feet to the
- 230 feet wide max
- 19,000,000 cubic feet
- Operates 650-1078 psig



POWERSOUTH
ENERGY COOPERATIVE

19,000,000 Cubic Foot Cavern



POWERSOUTH
ENERGY COOPERATIVE

CAES Operation

Dispatch's Swiss Army Knife

- **14 Minute Normal Start to 110 MW**
- **9 Minute Emergency Start**
- **20 to 110 MW Operating Range**
- **26 Hours of Operation @ 110 MW on Full Cavern**
- **-53 MW Load Response**



POWERSOUTH
ENERGY COOPERATIVE

Load Distribution

Peak Load
100%

CAES
Generation

PEAK

Power Input
to CAES
50%

INTERMEDIATE

0%

BASELOAD

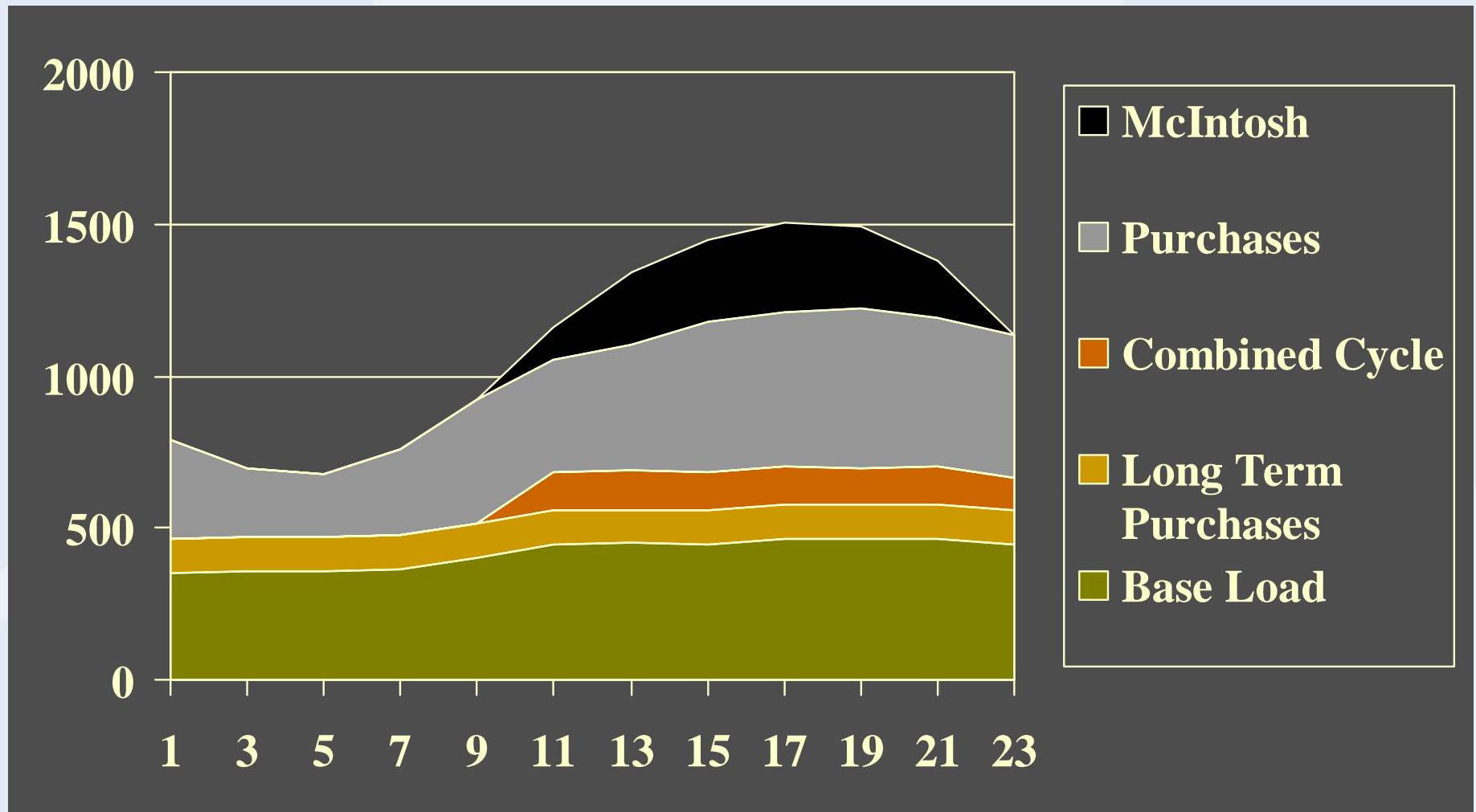
Midnight

Noon



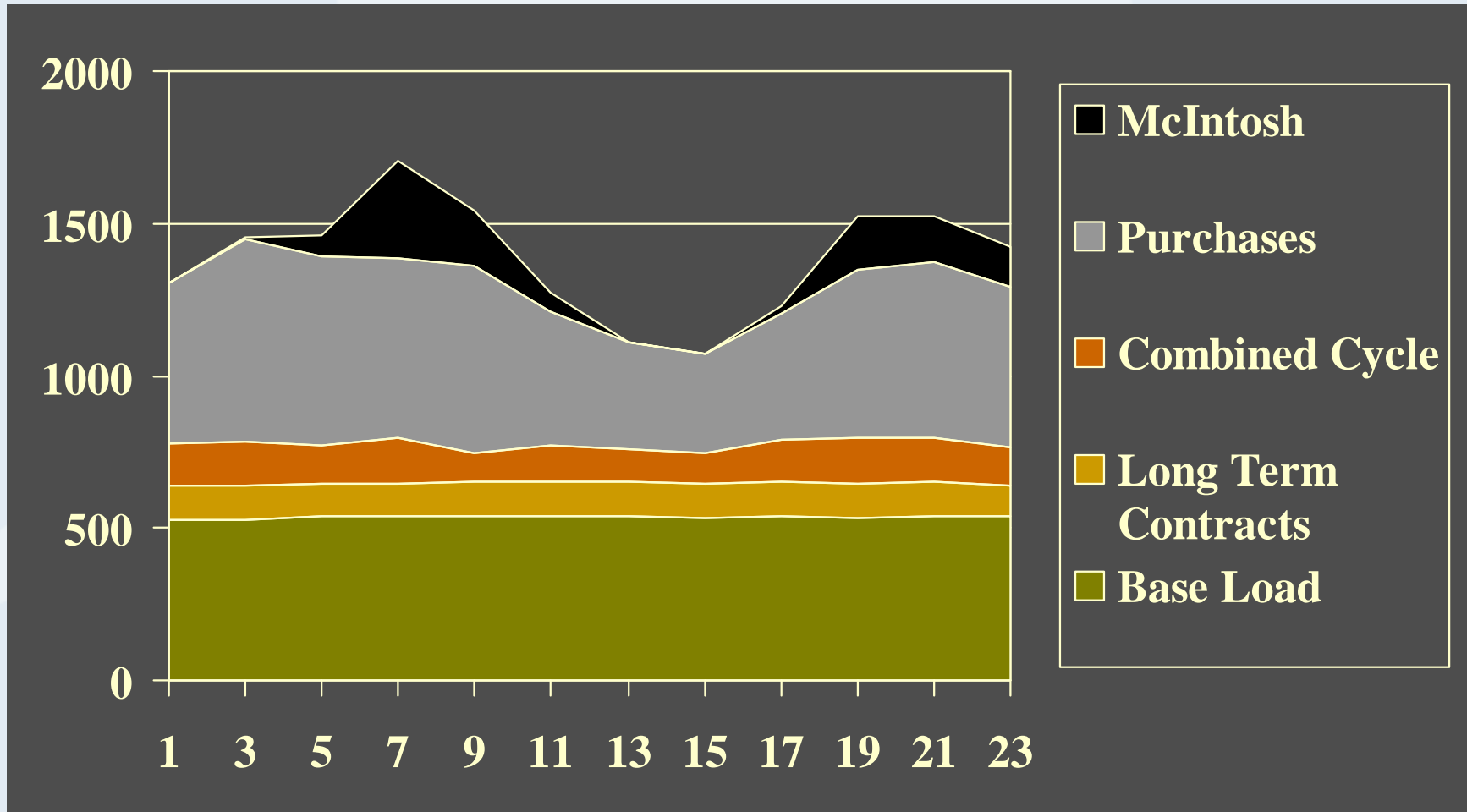
POWERSOUTH
ENERGY COOPERATIVE

Typical Summer day with the CAES Plant



POWERSOUTH
ENERGY COOPERATIVE

Typical Winter Day with the CAES Plant



POWERSOUTH
ENERGY COOPERATIVE