Terminal Blocks on the Walls

- Eliminated need for side panels
- Floor openings allowed field cables to be easily inserted and landed.
- Minimized cables in the ceiling cable trays
- Floor space utilization was greatly improved.
- Employees could no longer get “in” cabinets.
- Working space increased to 48”. 

![Image of terminal blocks on the walls]
Rear View of the Racks

• Wide open
• Easy access
• No terminal blocks
Key Points:
• Two rows of racks, Set A and Set B
• 5’ wide, dead-front hallway down the center
• 4’ Live-front hallway down each side with terminal blocks on the walls
• Lots of working room
• No close-clearance areas!
Main Features of all Control Buildings

• Protection and control equipment
• Telecommunications equipment
• DC system such as batteries, distribution panels and chargers
• Rest room facilities

• The complexity of the above items can vary significantly from site to site.
Sectional Modular Building

• TVA desired a future-proof building that could grow as the site needs grew.
• We desired standard building modules for each need: P&C, Telecom, battery room / restroom.
• TVA selected a 16’ nominal, overall width for all modules.
• All modules have a standard mating surface to join with adjacent modules.
• TVA created nine standard modules capable of meeting all the control building needs at any site.
Command Module #1

Contents:

- Battery room
- 2 Battery chargers
- Restroom
- 2 Exit doors
- Desk
- Staging area
- HVAC
- Lighting controls
- Eye wash
- Hydrogen Fan
Protection & Control Module #1

Contents:

- 20 P&C racks
- Terminal blocks on walls
- DC Distribution
- HVAC

16’ x 26’
Telecom Module #1

Contents:

• 17 Telecom 19” racks
• 3 Telecom 23” racks
• 1 Microwave rack
• HVAC

16’ x 25’
End Cap Module

Contents:

• Exit door
• Fire extinguisher
• Lighting control

16’ x 2’
Small, Medium, & Large

3 modules

4 modules

8 modules
Foundations & Cable Trenches

• Simple pier foundations with embedded plates
• Building welded to plates
• Trenches are placed slightly under building for cables to enter below the terminal blocks.
Summary

• We utilized commercially available racks for the relay and control mounting structure.
• We placed dead-front fuses on the front of the racks.
• We provided enough dead-front test switches in a small space to isolate all circuits to each relay.
• We moved the terminal blocks to the walls of the control building to allow us to retire side panels.
• We created nine modules capable of meeting the control building needs at any site.
• We increased our working space to 48” and minimized employee exposure to live terminals.
Questions?