SMUD
Technical Training
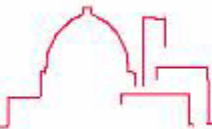
Recommended Education for Engineering Designer

- Required Knowledge/Skills
  - AutoCAD
    - Basic Skills
 - Algebra & Trigonometry
  - Reading and interpreting map symbols according to the legend
  - Reading technical material
  - Attention to detail

- Desired Knowledge and Skills
  - Customer service skills/experience
  - Construction print reading
  - Electrical theory and distribution equipment knowledge
  - Distribution system design experience
 - Electric Utility work experience
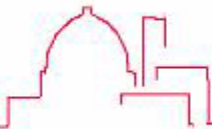
Engineering Designers (Line)

- Design of overhead and underground distribution lines and services
- Three Level Series
  - Engineering Designer I (entry)
  - Engineering Designer II (intermediate)
  - Engineering Designer III (journey)
- Engineering Designer IV(Lead)
  - Promotional
  - One lead per 4-6 designers
- Levels are distinguished by:
  - Complexity of design work
  - Independence in performing work
 - Decision making authority
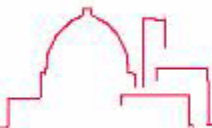
Engineering Designer Series Training Program

- Entry level designers assigned to training group
- Approximately 8 weeks of classroom training:
  - Basic Electricity
  - Distribution System & Operations
  - Design & Construction Standards
  - Meter & Service Requirements
  - Overhead design & engineering calculations: pole sizing, pole class, windloading, conductor sizing, sags & guying
  - Underground design & engineering calculations: conductor sizing, fault current, cable pulling, u-details
  - Voltage drop & flicker
- Classroom instruction
  - Written exams – 80% passing criteria
  - Allowed to retake exams
  - Study sessions provided prior to exam
- Fieldwork demonstrations
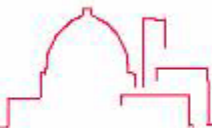
Engineering Designer Level II

- Intermediate level with design proficiency in two functional areas of distribution design (meter & service, residential, small comm…)

- Under general supervision, performs the design of more complex distribution lines and facilities (multiple trans. , comm < 1000amps)

- Acquired skills needed to advance to Level III by learning and exhibiting proficiency in the required skills necessary to perform higher level of design
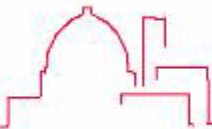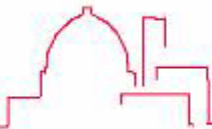
Engineering Designer Level III

- Posses Full Journey Level designer skills

- May be required to demonstrate significant negotiation, scheduling and coordination related to distribution design

- Perform the most complex distribution designs and coordinate the work for Level I and Level II Designers
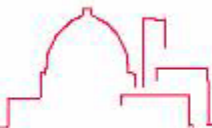
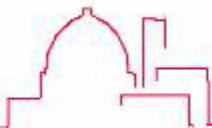# Engineering Designer Progression in Series

- Mandatory Progression to Designer III (5 years)
  - Level I to II – 2 Years
  - Level II to III – 3 Years
  - Designers rotate assignments within different processes to gain required design proficiencies

- Criteria for Progression
  - The Designer has passed position probation (1-Year)

AND

  - The Designer has successfully completed the required instruction and demonstrated the software and design proficiency outlined in the requirements

    - Level II – two proficiency areas
    - Level III – total of four proficiency areas

- Designers can accelerate their progression by meeting requirements earlier than maximum time frames

Questions?