

SEVENTEENTH ANNUAL

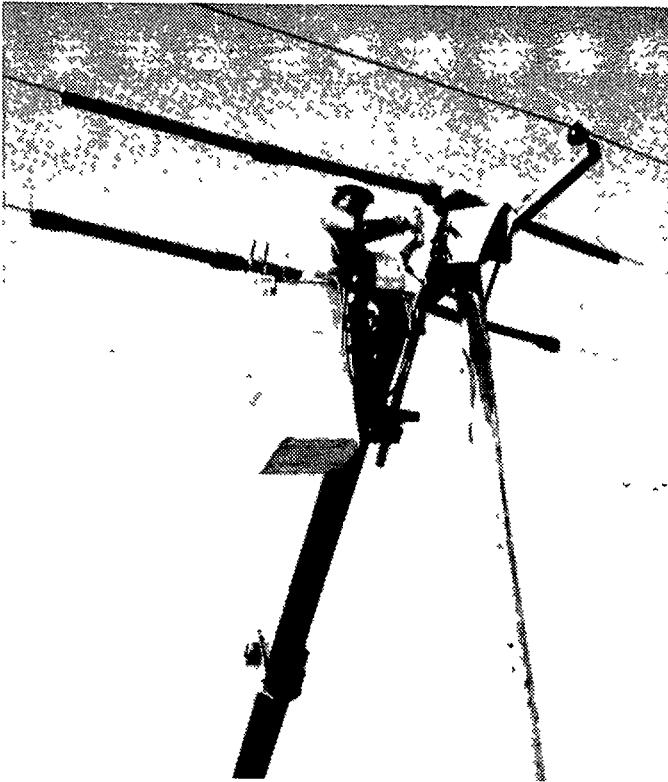
***JOINT UTILITY
TRAINING WORKSHOP***

JANUARY 21, 22, 23, 1992

RAMKOTA INN

605-336-0650

SIOUX FALLS, SOUTH DAKOTA



**SPONSORED BY
JOINT UTILITY TRAINING COMMITTEE
(JUTS)
SOUTH DAKOTA ELECTRICAL COUNCIL**

PROGRAM

SESSIONS PROGRAM INFORMATION

Each session is designed as a 16-hour mini-course.

Registration will be for one session only per individual. You will remain in that session for the entire length of the course. Certificates will be sent to your respective company if attendance has been continuous.

REGISTRATION

\$85.00 per person

Pre-Paid Registration will include breakfast on Wednesday and Thursday morning at 6:30 a.m.- 8:00 a.m. in the Exhibit Hall and noon meal on Wednesday in the Exhibit Hall.

Tuesday, January 21, 1992

10:00 a.m. to 12:00 noon

Ramkota Inn

LUNCHEON

Wednesday, January 22, 1992

Ramkota Inn

12:00 p.m. to 1:00 p.m.

Mini-Courses will be:

Tuesday

1:00 p.m to 5:00 p m.

Wednesday

8:00 a.m. to 5:00 p m.

Thursday

8:00 a.m. to 12:00 p.m.

SESSION I-A and SESSION I-B

Ramkota Inn

Session I-A -- Harvest Room (lower level)

Session I-B -- Viking Room (lower level)

LEADERSHIP SEMINAR

Tuesday, Jan. 21	1:00 p.m. - 5 00 p.m.
Wednesday, Jan. 22	8:00 a.m. - 5:00 p.m.
Thursday, Jan 23	8 00 a.m. -12.00 noon

This session will be taught by two instructors. Each will work with half the participants at one time, then switch to work with the other half. Enrollment is limited to 40 people, 20 in each group.

TITLE: Living and Working Together

- *Controlling difficult situations
- *Dealing with tense work situations without losing credibility
- *How non-verbal behavior and a person's life history effects leading others
- *Improving employee performance and working as a team
- *Employee discipline and improving performance
- *Becoming more assertive and effective at work

Instructors: Jim Kellar, Training Associates, Sioux Falls, SD
Suzanne Knudson, Human Relations Training Consultant,
Sioux Falls, SD

Coordinators: James Mergen and Don Seeklander

COURSE LIMITED TO A MAXIMUM OF 40 STUDENTS

SESSION II

Ramkota Inn
Exhibit Hall

COMMERCIAL DRIVERS LICENSE SEMINAR

Description: To assist attendees in understanding the Federal Motor Carrier Regulations and prepare them to pass **the written examination administered by the State of South Dakota.**

PART I

Tuesday, 1:00 p.m. - 3:00 p.m.

TITLE: **CDL Regulations & How They Effect Electric Utilities**

Instructor: Sgt. Floyd R. Park, S.D. Highway Patrol

PART II

Tuesday, 3:15 p.m. - 5:00 p.m.

TITLE: **Facts Necessary for CDL, General Knowledge, Air Brakes
Combination Vehicles and Cargo**

Instructor: Ken Albers, Southeast Vocational Technical Institute
Sioux Falls, SD

PART III

Wednesday, 8:00 a.m. - 5:00 p.m.

TITLE: **Continuation of the CDL Workshop with a complete review**

Instructor: Ken Albers, Southeast Vocational Technical Institute
Sioux Falls, SD

PART IV

Thursday, 8:00 a.m. - 12:00 noon

TITLE: **Written Examination for Class A CDL**

Examiners: Stan Knox, Pierre, SD & Harry James, Sioux Falls, SD
Coordinator: Dean Greer

SESSION III
Ramkota Inn
Washington Room

TRANSFORMER CONNECTIONS

A 16-hour workshop designed for apprentice linemen or for experienced linemen and servicemen who are willing to go through a refresher course seeking ideas for communicating and explaining electrical terms and transformer connections to employees who they may supervise. The workshop experience will be valuable to senior linemen who did not have the opportunity to learn the trade at a lineman's school. A pocket calculator would be helpful in determining the anticipated voltage.

Part I

Tuesday, 1:00 p.m. - 5:00 p.m.

Description: This session begins with a 2-1/2 hour segment of slides, demonstration, and lecture designed to give line personnel a non-technical, fundamental review of single and three-phase electric power followed with DELTA CONNECTIONS SIMPLIFIED. The remaining portion of the session will involve hands-on experience with miniature equipment including class participation in determining transformer polarity and turns ratio.

Part II

Wednesday, 8.00 a.m. - 12:00 noon

Description: This session opens with a lecture and demonstration on WYE connections. One hour will then be devoted to hands-on experience with miniature transformers and poles. A lecture will be presented on sequence after which the class will return to construction of miniature transformer banks. Experienced linemen may devote hands-on training time to emergency exercises.

SESSION III - TRANSFORMER CONNECTIONS (CONTINUED)

Part III

Wednesday, 1:00 p.m. - 5:00 p.m.

Description: VOLTAGE PHASORS (Voltage Vectors) will be the subject of Part 3. The class will do numerous exercises involving VOLTAGE PHASORS and will parallel miniature transformer banks to confirm the accuracy of predicted angular displacement and secondary voltages. It is important that linemen know how to parallel transformer banks so as to not interrupt continuity of electrical service when transferring load from the old to the new transformer bank.

Part IV

Thursday, 8:00 a.m - 12:00 noon

Description: Slides/lecture on 3-phase power. During hands-on experience, the linemen will be involved with trouble shooting and will have the opportunity to solve emergency transformer bank problems.

Instructor: Gordon Solee, Engineer Consultant, Fergus Falls, MN

Supervisors: Clark Hendrickson, NSP, Sioux Falls, SD
Vic Graham, NSP, Sioux Falls, SD
Richard Davis, NWPS, Huron, SD
Dennis Wagner, NWPS, Huron, SD
Daryl Anderson, MDU, Mobridge, SD
George Colombe, East River Electric, Madison, SD

Coordinators: Al Kubousek and Andy Jensen

16 other credit hours will be given by the State Electrical Commission.

COURSE LIMITED TO A MAXIMUM OF 48 STUDENTS

SESSION IV
Ramkota Inn
Jefferson Room

Z.E.M.A.R. REGULATOR SCHOOL

Description: Students will be rotated through work stations containing regulators and panels. Regulator types will include General Electric, Allis Chalmers, Siemens Allis, Siemens, and McGraw-Edison. Students here get an excellent opportunity to trouble shoot old and new types of controls and learn good trouble shooting techniques which can apply to other types of equipment.

PART I

Tuesday, 1.00 p.m. - 5:00 p.m.

TITLE: Theory and Operation

PART II

Wednesday, 8:00 a.m. - 12:00 noon

TITLE: Application and Accessories

PART III

Wednesday, 1:00 p.m. - 5.00 p.m.

TITLE: Electronics and Trouble Shooting Procedures

PART IV

Thursday, 8:00 a.m. -12:00 noon

TITLE: Hands-on Trouble Shooting and Questions and Evaluation

Instructor: Joe Robb, Z.E.M.A.R. Regulator School
Zanesville, OH

Coordinators: Bob Crawford and Richard "Slim" Rutschke

COURSE LIMITED TO A MAXIMUM OF 24 STUDENTS

16 other credit hours will be given by the State Electrical Commission.

SESSION V-A

Ramkota Inn
Lincoln Room

ELECTRIC METERING

Tuesday, 1:00 p.m. - 5:00 p.m

Wednesday, 8:00 a.m. - 5:00 p.m

TITLE: Basic Metering

Description: A 12-hour course designed for linemen or apprentice metermen with little or no metering experience. The course will cover: fundamentals of a watt hour meter, name plate and register information, determining multipliers, selection of meters and sockets per installations, and review of CT and PT applications. Included in this course will be fundamentals, performance, programming, and software of electronic and 100% solid state meters.

Each student is required to bring to the course a meter: any type of meter will work, i.e., single or polyphase (3 phase), old or new

Thursday, 8:00 a.m. - 12:00 noon

Description: Round table discussion on metering installations, problems, and conditions found in the field.

Instructors: Bill Shurtleff, G.E. Meter Systems Engineers
Overland Park, Kansas
Mike White, G.E. Sales Engineers
Minneapolis, Minnesota
Tom Johnson, G.E. Sales Engineers, Mpls., MN
Mike Crane, G.E. Sales Engineers, Mpls., MN
Greg May, May Engineering, Sioux Falls, SD
Ernie Leesch, Plainsco, Sioux Falls, SD

Coordinators: Ken Wetz

16 other credit hours will be given by the State Electrical Commission

SESSION V - B

Ramkota Inn
Roosevelt Room

ELECTRIC METERING

Tuesday, 1:00 p.m. - 5:00 p.m.

Wednesday, 8:00 a.m. - 5:00 p.m.

Thursday, 8:00 a.m. - 12:00 noon

TITLE: Advanced Metering

Description: A 16-hour course designed for metermen or individuals with a previous metering background.

The course will cover: Common metering questions for billing applications
Rr-Kr-Rs Primary Reading vs. Secondary Reading
Instrument Transformer Thermal Rating Factor
Accuracy Issues Associated with Meter Current Curves
History of Metering Configurations
Billing Methods Today (Pros/Cons)
Meter Technology to Include Rolling Block Interval vs. Block Internal
Solid State vs. Electro-Mechanical Meters
User Friendliness of Software
Harmonics Issue
Solid State Registers and Multipliers
First Level Multifunction Metering (Hands on)
High Level Multifunction Meter to Include Substation, Industrial, Commercial
Economic Justification for Multifunction Meters and Retrofits

Instructors:	George Stevens -	Schlumberger, Inc.
	Randy Stevens -	Schlumberger, Inc.
	Jim Richardson -	Schlumberger, Inc.
	Eric Thoreson -	Border States Electric
	Brad Kralheim -	Border States Electric
	Don Knutson -	Border States Electric

Coordinator: Ron Globke

16 other credit hours will be given by the State Electrical Commission.

SESSION VI
Ramkota Inn
Amphitheater II

ENGINEERING

PART I

Tuesday, 1:00 p.m. - 5:00 p.m.

TITLE: EMF
Description: Understanding the electric/magnetic field issue and its importance to the utility industry
Instructor: Robert S. Banks
Robert S Banks Associates, Minneapolis, MN

PART II

Wednesday, 8:00 a.m. - 10:00 a.m.

TITLE: EMF Measurements
Description: Tools and Techniques for measuring electric/magnetic fields
Instructor: Jerry D. Martens
Otter Tail Power Company, Fergus Falls, MN

PART III

Wednesday, 10.00 a.m. - 12.00 noon

TITLE: Fault Indicators
Description: Types of fault indicators available and principles of operation
Instructor: Jeff A. McCammon
Cooper Power Systems, Minneapolis, MN

PART IV

Wednesday, 1:00 a.m. - 5:00 p.m.

TITLE: Stray Voltage
Description: Causes and effects of stray voltage
Instructor: Jerry D. Martens
Otter Tail Power Company, Fergus Falls, MN

Session VI - Engineering (continued)

Part V

Thursday, 8:00 a.m. - 12:00 noon

TITLE: Stray Voltage

Description: Causes and effects of stray voltage

Instructor: Jerry D. Martens

Otter Tail Power Company, Fergus Falls, MN

Coordinators: Stuart Wevik and Charles Birkholt

16 other credit hours will be given by the State Electrical Commission.

SESSION VII
Ramkota Inn
Amphitheater I

OPERATIONS AND SAFETY

PART I

Tuesday, 1:00 p.m.- 5:00 p.m.

TITLE: Chain Saw Safety

Description: Safety concerns: chain saw functions and maintenance; cause, effect and prevention of kick-back; and protective equipment.

Instructor: Alex Bildeaux, Jr., Tilton Equipment Company
St. Paul, MN

PART II

Wednesday, 8:00 a.m. - 11:00 a.m.

TITLE: Burn Management at the Scene

Instructor: Marla Devaney, Burn Coordinator
McKenna Hospital, Sioux Falls, SD

TITLE: One Person's Lifelong Experience from an Electrical Injury

Instructor: Sheldon Jensen, Turner-Hutchinson Electric, Marion, SD

PART III

Wednesday, 11:00 a.m. - 12:00 noon & 1:00 p.m. - 2:00 p.m.

TITLE: Cotton Clothing and Personal Protective Equipment

Description: Care and maintenance of protective equipment, rubber gloves, etc.

Instructor: Gale Tollefson, Otter Tail Power Company
Wahpeton, ND

Session VII - Operations and Safety (continued)

PART IV

Wednesday, 3:00 p.m.-5:00 p m.

TITLE: Trencher Operations & Maintenance & Safety
Instructor: Jerry Sullivan and Joe Coe,
J.I. Case Equipment

PART V

Thursday, 8.00 a.m. - 10:30 a m

TITLE: Aerial Equipment Operation and Maintenance
Instructor: Cornelius "Cornie" Shehan
Hydraulic Services, Inc.
Seward, Nebraska

PART VI

Thursday, 10:30 - 12.00 noon

TITLE: Barricading and Flagging
Instructor: Scott T. Jansen, SD Dept. of Transportation,
Mitchell, SD

Coordinators: Joe Halverson and Bill Neiles

SESSION VIII

Ramkota Inn
Back Dorchester

CUSTOMER RELATIONS

Tuesday, 1:00 p.m - 5 00 p.m.

Wednesday, 8:00 a.m - 5 00 p.m.

Thursday, 8:00 a.m. - 12:00 noon

This class consists of hands-on training on how to deal with other people. It is specifically designed to deal with utility customers but will also help the participant communicate with spouse, children, and people in general.

It is a hands-on practice-type training class put together by Kaset, Inc. It is applicable to all classifications of employees but most helpful to those dealing directly one-to-one with customers.

Instructor: Randy L. Erickson, Black Hills Power and Light
Rapid City, SD

Coordinator: Juell Chapman

COURSE LIMITED TO A MAXIMUM OF 20 PEOPLE

SESSION IX

Ramkota Inn
Crystal Room

NATIONAL ELECTRIC SAFETY CODE

Tuesday,	1:00 p.m. - 5:00 p.m.	Part 1 & 2
Wednesday,	8:00 a.m. - 5:00 p.m.	Part 3, 4, & 5
Thursday,	8:00 a.m. - 12:00 noon	Part 5 & 6

The purpose of this class is to teach electric distribution personnel how to use the 1991 NESC book and some of the things to look for on their existing system. This class is distribution oriented.

Lectures, practice exercises, videos and practical application slides are used to make this a multimedia course.

" STUDENTS MUST BRING A 1991 NESC BOOK WITH THEM."

The class is broken into 7 parts:

- | | |
|----------------------------------|------------------|
| 1. What is the NESC | Sections 10-17 |
| 2. Grounding Methods | Sections 90-99 |
| 3. Electric Supply Stations | Sections 100-193 |
| 4. Development of Overhead Lines | |
| 5. Overhead Lines | Sections 200-279 |
| 6. Underground Lines | Sections 300-391 |
| 7. Work Rules | Sections 400-446 |

Instructor: Willy Haufschild, Montana-Dakota Utilities Company
Mobridge, SD

Coordinator: Willy Haufschild

4 other credit hours will be given by the South Dakota Electrical Commission.

COURSE LIMITED TO A MAXIMUM OF 22 PEOPLE

Joint Utility Training Committee

Chairman:

Bruce Brunick, City of Vermillion, SD

Vice-Chairman:

Dean Greer, Northern States Power Co , Sioux Falls, SD

Secretary:

Ron Globke, Turner-Hutchinson Electric, Marion, SD

Treasurer:

Randy Dickerson, South Dakota Electric Association, Pierre, SD

South Dakota Electrical Council:

Gen Hutmacher, Montana-Dakota Utilities, Moberge, SD

Pete Swanson (liaison) Watertown Municipal Utilities, Watertown, SD

JUTS Members

South Dakota Rural Electric Association:

Charles W Birkholt, Cam Wal Electric, Selby, SD

Ken Wetz, Butte Electric, Newell, SD

Ron Globke, Turner-Hutchinson Electric, Marion, SD

Juell Chapman, Grand Electric, Bison, SD

Investor-Owned Electric Utilities:

Al Kubousek, Otter Tail Power Company, Milbank, SD

Robert Crawford, Northwestern Public Service, Huron, SD

Willy Hauschild, Montana-Dakota Utilities Co., Moberge, SD

Dean Greer, Northern States Power Company, Sioux Falls, SD

Stuart Wevik, Black Hills Power and Light, Rapid City, SD

Municipal Electrics:

Andy Jensen, Brookings Municipal Utilities, Brookings, SD

Jim Mergen, Sioux Falls Light Department, Sioux Falls, SD

Bruce Brunick, City of Vermillion, Vermillion, SD

Don Seeklander, City of Estelline, SD

Generation, Transmission, Political Subdistricts, Statewide Association:

Bill Neiles, South Dakota Rural Electric Association, Pierre, SD

Slim Rutschke, South Dakota Rural Electric Association, Pierre, SD

Randy Dickerson, South Dakota Rural Electric Association, Pierre, SD

Joe Halverson, East River Electric Power Cooperative, Madison, SD

Rodney Gunn, West River Electric, Rapid City, SD

The JUTS committee would like to thank the following instructors and their companies for their participation in the Seventeenth Annual Joint Utility Training Workshop. Without their involvement, this program would not be possible.

All instructors are cordially invited to breakfast at 6:30 a.m. - 8:00 a.m. on January 22 & 23 in the Ramkota Inn Exhibit Hall and the noon luncheon on January 23 in the Exhibit Hall.

Session I:

Jim Kellar	Training Associates, Sioux Falls, SD
Suzanne Knudson	Human Relations Training Consultant, Sioux Falls, SD

Session II:

Sgt. Floyd R. Park	SD Highway Patrol
Ken Albers	Southeast Vocational Technical Institute, Sioux Falls, SD
Stan Knox	Pierre, SD
Harry James	Sioux Falls, SD

Session III:

Gordon Solee	Engineer Consultant Fergus Falls, MN
Clark Hendrickson	Northern States Power Company Sioux Falls, SD
Vic Graham	Northern States Power Company Sioux Falls, SD
Richard Davis	Northwestern Public Service Huron, SD
Dennis Wagner	Northwestern Public Service Huron, SD
Daryl Anderson	Montana-Dakota Utilities Mobridge, SD
George Colombe	East River Electric Power Cooperative Madison, SD

Session IV:

Joe Robb

Z.E M A R. Regulator School
Zanesville, OH

Session V-A:

Bill Shurtleff

G E. Meter Systems Engineer
Overland Park, Kansas

Mike White

G.E. Sales Engineers
Minneapolis, Minnesota

Tom Johnson

G E. Sales Engineers
Minneapolis, MN

Mike Crane

G.E. Sales Engineers
Minneapolis, MN

Greg May

May Engineering
Sioux Falls, SD

Ernie Leesch

Plainsco, Sioux Falls, SD

Session V-B:

George Stevens

Schlumberger, Inc

Randy Edwards

Schlumberger, Inc.

Jim Richardson

Schlumberger, Inc.

Eric Thoreson

Border States Electric

Brad Kralheim

Border States Electric

Don Knutson

Border States Electric

Robert S Banks

Robert S Banks Associates
Minneapolis, MN

Jerry D. Martens

Otter Tail Power Company
Fergus Falls, MN

Jeff A. McCammon

Cooper Power Systems
Minneapolis, MN

Session VII

Alex Bildeaux, Jr.	Tilton Equipment Company St. Paul, MN
Maria Devaney	Burn Coordinator McKenna Hospital Sioux Falls, SD
Sheldon Jensen	Turner-Hutchinson Electric Marion, SD
Gale Tollefson	Otter Tail Power Company Wahpeton, ND
Jerry Sullivan	J.I. Case Equipment
John Coe	J.I. Case Equipment
Cornelius Shehan	Hydraulic Services, Inc. Seward, Nebraska
Scott T. Jansen	S.D. Department of Transportation Mitchell, SD

Session VIII:

Randy L. Erickson	Black Hills Power and Light Rapid City, SD
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Session IX:

Willy Haufschild	Montana-Dakota Utilities Company Mobridge, SD
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***17th Annual
Joint Utility Training School
January 21, 22, & 23, 1992
Ramkota Inn - Sioux Falls, SD***

**REGISTRATION FEE
is \$85.00 per student. PREPAID**

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|-------|------------------------------------|-------------|
| I. | LEADERSHIP SEMINAR- | |
| | I-A | -20 Maximum |
| | I-B | -20 Maximum |
| II. | COMMERCIAL DRIVERS LICENSE SEMNIAR | |
| III. | TRANSFORMER CONNECTIONS** | -48 Maximum |
| IV. | Z.E.M.A.R. REGULATOR SCHOOL | -24 Maximum |
| V. | ELECTRIC METERING | |
| | V-A | |
| | V-B | |
| VI. | ENGINEERING | |
| VII. | OPERATIONS AND SAFETY | |
| VIII. | CUSTOMER RELATIONS | -22 Maximum |
| IX. | NATIONAL ELECTRIC SAFETY CODE | -25 Maximum |

Some sessions have limited enrollment, so make your reservations as soon as possible.

Please submit this form with registration. Make checks payable to Joint Utility Training School. Refunds and changes in registration will be allowed to January 4th. Send check and registration form to: South Dakota Rural Electric Association, Attention: Dawn Trapp, Loss Control Department, Box 1138, Pierre, SD 57501.

** Session III: It would be helpful if the person who registers for this workshop could express a preference for: a) Pole Mount Transformers, b) Pad-Mount Transformers, or c) Miniature Substations.

REGISTRATION

1992 JOINT UTILITY TRAINING SCHOOL

Company _____

Address _____

Type or print name as it should appear on the certificate

Session	Name	Job Title

Please submit this form with registration. Make checks payable to Joint Utility Training School. Send check and registration form to South Dakota Rural Electric Association, Attn Dawn Trapp, Box 1138, Pierre, SD 57501