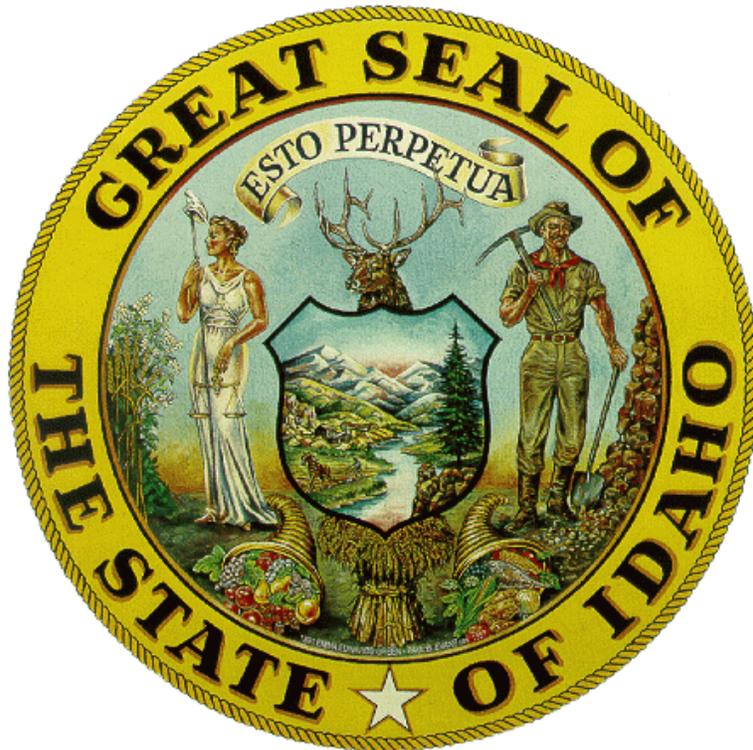


DIVISION OF BUILDING SAFETY

IDAHO ELECTRICAL BOARD
VIDEOCONFERENCE MEETING

JULY 21, 2016



IDAHO ELECTRICAL BOARD

Agenda Item No. 01

Agenda

PRESENTER: Bob Scott, Chairman

OBJECTIVE: Approve agenda for the July 21, 2016 Idaho Electrical Board meeting.

ACTION: Consent

BACKGROUND:

**PROCEDURAL
HISTORY:**

ATTACHMENTS: Tentative agenda



TENTATIVE AGENDA

NOTICE OF PUBLIC MEETING/PUBLIC HEARING

IDAHO ELECTRICAL BOARD VIDEOCONFERENCE MEETING

**Division of Building Safety
1090 East Watertower Street, Suite 150, Meridian
1250 Ironwood Drive, Suite 220, Coeur d'Alene
2055 Garrett Way, Building 1, Suite 4, Pocatello**

dbz.idaho.gov - (208) 332-7137

***Thursday, July 21, 2016
9:30 a.m. - 3:30 p.m. (MDT)***

(Note: North Idaho - Meeting Commences @ 8:30 a.m. PDT)

9:30 a.m.

CALL TO ORDER - Bob Scott, Chairman

- Roll Call & Introductions
- Open Forum
 - City and County Concerns

CONSENT AGENDA

1. Approval of the July 21, 2016 Agenda - Bob Scott
2. Approval of the April 21, 2016 Board Meeting Minutes - Bob Scott

PUBLIC HEARING

3. Negotiated Rulemaking -- Review proposed amendments to the National Electrical Code (NEC) AND proposed rule on submersible well pumps - Bob Scott

ACTION AGENDA

4. National Electrical Code - Bob Scott
5. Submersible Well Pumps - Bob Scott
6. Electrical Apprenticeship Standards - Matt Rehl, Idaho Career & Technical Education
7. Required Inspections - Steve Keys
8. Idaho Code -- Title 54 Chapter 10 - Steve Keys
9. Residential Wireman License - Warren Wing

INFORMATIONAL AGENDA

10. Homeowners -- Primary or Secondary Residences - Warren Wing

11. Program Manager Report - Warren Wing

12. Compliance Program Report - Terry Blessing

13. Operational Report - Steve Keys

14. Administrator Report - C. Kelly Pearce

a. Financial Report - Fred Sisneros

3:30 p.m. ADJOURN

All times, other than beginning, are approximate and are scheduled according to Mountain Daylight Time (MDT), unless otherwise noted. Agenda items may shift depending on the Board's preference. 07/05/2016r

IDAHO ELECTRICAL BOARD

Agenda Item No. 02

Minutes

PRESENTER: Bob Scott, Chairman

OBJECTIVE: Approve minutes from the April 21, 2016 Idaho Electrical Board meeting.

ACTION: Consent

BACKGROUND:

**PROCEDURAL
HISTORY:**

ATTACHMENTS: Draft minutes



**IDAHO ELECTRICAL BOARD
VIDEOCONFERENCE MEETING**

Thursday - April 21, 2016 - 9:30 a.m. (MDT)

**Division of Building Safety
1090 East Watertower Street, Suite 150, Meridian
1250 Ironwood Drive, Suite 220, Coeur d'Alene
2055 Garrett Way, Building 1, Suite 4, Pocatello**

***DRAFT MINUTES OF THE APRIL 21, 2016 MEETING**

NOTE: The following report is not a verbatim transcript of the discussions at the meeting;
however, is intended to record the significant features of those discussions.

Chairman Bob Scott called the meeting to order at 9:30 a.m. (MDT).

Board Members Present:

Bob Scott, Chairman
Jeff Wheeler, Vice-Chairman
Rick Stark
Dale Pippitt
Denis Duman
Allan Perman
Mark LaBolle
Joe Harbacheck

DBS Staff Members Present:

C. Kelly Pearce, Administrator
Steve Keys, Deputy Administrator-Operations
Ron Whitney, Deputy Administrator-Administration
Patrick Grace, Deputy Attorney General
Bill Hatch, Public Information Officer
Fred Sisneros, Financial Manager
Warren Wing, Electrical Program Manager
Larry Jeffres, Regional Manager, Region 1
Chris Jensen, Regional Manager, Region 3
Terry Blessing, Compliance Program Manager
Gary Sonnen, Regional Supervisor, Region 1
Renee Bryant, Administrative Assistant 2/Board Support

Board Members Absent:

Greg Eagy

DBS Staff Members Absent:

Adam Bowcutt, Regional Supervisor, Region 3

◆ **Open Forum**

City and County Concerns - No items or concerns were brought forth.

◆ **Approval of the April 21, 2016 Agenda**

MOTION: Mark LaBolle made a motion to approve the agenda as presented. Jeff Wheeler seconded. All in favor, motion carried.

◆ **Approval of the January 21, 2016 Board Meeting Minutes, March 7, 2016 and March 17, 2016 Special Board Meeting Minutes**

**Board Member Pippitt stated in the second paragraph of the March 17th draft minutes, the two-year sunset clause should expire at the adjournment of the 2018 legislature, not the 2016 legislature.

MOTION: Dale Pippitt made a motion to approve the three sets of minutes. Joe Harbacheck seconded. All in favor, motion carried.

◆ **Master Electrician License**

At the January 2016 meeting, Paul McNamara, out-of-state contractor, asked the Board to make an allowance and let him test for the master electrician license. By statute, the Board and DBS do not have that authority. It was suggested Mr. McNamara work with the Deputy Administrator-Operations and bring to the April 2016 meeting a proposal to amend the Idaho Code. Except for the initial contact by the Deputy Administrator-Operations, there has been no communication from Mr. McNamara.

◆ **Required Inspections**

Currently, contractors do not have to request inspections on the following electrical installations: 1) Concealed work, 2) Service equipment, 3) Temporary service installations, and 4) Final inspections.

A proposed rule, to define when an inspection is required on the above electrical services, was addressed. The Deputy Administrator-Operations offered, and the Board agreed, to issue the rulemaking notice, as well as place the topic *Required Inspections* as an action item on the July 21, 2016 Board meeting agenda.

MOTION: Mark LaBolle made a motion directing the Division to proceed with the topic *Required Inspections*; bringing it to the July Board meeting as an action item. Rick Stark seconded. All in favor, motion carried.

ACTION: The Division will begin the negotiated rulemaking process on the proposed rule; requiring inspections on concealed work, service equipment, temporary service installations, and final inspections.

ACTION: The topic *Required Inspections* will be placed as an action item on the July 21, 2016 Electrical Board meeting agenda.

◆ **NOV Case Report**

At the January 2016 meeting, there was confusion over the information provided relative to notice of violations (NOV) and payment of civil penalties that were levied. A newly revised report was addressed by the Deputy Administrator-Operations.

The Division was asked that future Electrical NOV/Civil Penalties Issued Reports identify the contractors and their infractions rather than the inspectors issuing the violations.

ACTION: Future Electrical NOV/Civil Penalties Issued Reports will state the contractors and their infractions instead of the inspectors.

◆ **Program Manager Report**

Facebook - The Division's Electrical Program is now on Facebook and has 175 contractors and journeymen following as "friends". Facebook friends are immediately notified through their cell phones when new policies, procedures, interpretations, etc. are posted.

Policies - The following policies are available on the Division's website: 1) Fairs and carnivals (guidelines for inspection of portable wiring and equipment), and 2) Concrete-encased electrodes.

Solar Photovoltaic (PV) Plan Review - Since the Solar Photovoltaic Plan Review policy was initiated in January 2016, 54 plans have been reviewed. Currently, there is only one licensed PV specialty contractor in the entire state of Idaho. Anyone else installing PV is either an electrical contractor or illegally doing the work.

Solar Photovoltaic (PV) Systems, Wind and Alternate Energy Webpage - A new solar page has been created on the Division's website. The topics are: 1) Program manager bulletins, 2) Solar plan review procedures, 3) Useful information, 4) Documents, 5) Solar PV, wind and alternate energy frequently asked questions (FAQ), 6) Publications & brochures, and 7) Links to different websites within the solar industry.

Homeowners Webpage - The Division's "homeowners" page is being updated. This useful page will assist residents to understand the processes and procedures required to install electrical, HVAC and plumbing on their own property.

Submersible Pumps - The first meeting of the Submersible Pump Collaborative is April 28th at 9:30 a.m. (MDT) / 8:30 a.m. (PDT). The meeting will be held via videoconference between the Idaho Department of Lands office in Coeur d'Alene, and the Division's offices in Meridian and Pocatello. Board Member Pippitt will be the representative for the Board at this and future collaborative meetings.

◆ **Compliance Program Supervisor Report**

Program - The Compliance Program is going well. There is a rise with non-licensed individuals advertising on Craigslist and Facebook.

Classes - The Compliance Program Supervisor continues to provide PWCL classes. He will teach the class in each of Idaho's 44 counties; 22 in the spring and 22 in the fall. So far, he has been to seven (7) counties.

◆ **Operational Report**

800-Line - With an increase in the purchase of permits and inspections, the Division's 800-line (three lines in Meridian, two in Pocatello, and two in Coeur d'Alene) averages 260 phone calls a day. This number does not include individual lines or inspectors' cell phones.

Permit Rule - In the past, permits were called inspection tags. A draft rule, to change the verbiage to permits, is included in the board packet. The Deputy Administrator-Operations stated there will either need to be a statute change OR some kind of verbiage to interface with what is in statute as it pertains to inspection tags.

Civil Penalty Rule - Also in the packet, is a draft rule for two new civil penalties. They are: 1) Permits (failure to obtain), and 2) Failure to request a required inspection.

Idaho Code -- Title 54 Chapter 10 - A potential rewrite of the electrical statute, Title 54 *Professions, Vocations, and Businesses Chapter 10 Electrical Contractors and Journeymen* was distributed. The proposal would change the fundamental way licensing is handled relative to the electrical trade, as well as bring consistency among the electrical, HVAC and plumbing trades.

The Deputy Administrator-Operations suggested the Board review the proposal; bringing it to the July Board meeting as an action for possible endorsement.

ACTION: The topic *Idaho Code -- Title 54 Chapter 10* will be placed as an action item on the July 21, 2016 Electrical Board meeting agenda.

TRAK-iT - Chairman Scott asked how modifications to TRAK-iT were coming along as it pertains to continuing education unit (CEU) hours and online renewals. The Division continues to work on those two issues. One idea is to use a third party entity for people to register their CEU requirements.

The Deputy Administrator-Operations offered to send an update to the Board on the alterations currently being made to TRAK-iT.

ACTION: The Division will provide to the Board, via e-mail, an update on the current modifications to TRAK-iT as it pertains to CEU hours and on-line renewals.

It was brought to Chairman Scott's attention when entering job value on a permit in TRAK-iT, the system will not let an individual go past a certain dollar amount. This is the first the Licensing and Permitting Program Supervisor has heard about this issue, and will have staff check into it.

ACTION: The Licensing and Permitting Program Supervisor will have staff research why there is a cap on the permit dollar amount in TRAK-iT.

◆ **Administrator Report**

Financial Report - The Electrical Board Fund, FY 2016 financial statement as of March 31, 2016, was reviewed.

Telephone System - On July 1st, the Division will purchase a new telephone system.

Idaho's Construction Industry - In conjunction with the Department of Commerce, the Division made a presentation at the ASHRAE Technical Conference on trends, industry and growth in the state of Idaho.

Budget - The Division has received approval for five additional full-time positions; four inspectors and one clerical.

Dig Line Bill - The 2016 legislature approved, and the Governor signed the bill; creating a 13-person advisory board placed within the Division. The purpose of the Board will be to provide for the protection of public health and safety regarding underground facilities and to reduce damages to those facilities.

Merging of Boards - The 2016 legislature also passed a bill to combine the Manufactured Housing and Modular Building Advisory Boards into one new eight-member board titled *Factory Built Structures Advisory Board*.

School Safety/Security Program and Board - The legislature expanded upon the Division's pilot project with regard to school safety and security; establishing a five-member office within the Agency. Along with the new program, an 11-member board titled *Idaho School Safety and Security Advisory Board* was approved and becomes effective July 1, 2016.

Employee's Cost of Living - The Governor suggested state employees receive a three percent salary increase based on meritorious evaluations. There will be no raise in premiums for employee health care.

Solar Projects - Upon completion, Kuna's solar project will have over 360,000 4x8 panels and generate 40 megawatts. Also scheduled is an 80-megawatt complex in the Grandview area.

2017 National Electrical Code - Tim McClintock, National Fire Prevention Association, made a one-hour PowerPoint presentation titled *2017 NEC® Significant Changes*.

◆ **Adjournment**

MOTION: Mark LaBolle made a motion to adjourn the meeting. Allan Perman seconded. All in favor, motion carried.

The meeting adjourned at 12:10 p.m. (MDT).

BOB SCOTT, CHAIRMAN
IDAHO ELECTRICAL BOARD

C. KELLY PEARCE, ADMINISTRATOR
DIVISION OF BUILDING SAFETY

DATE

DATE

*These DRAFT minutes are subject to possible corrections and final approval by the Idaho Electrical Board. 06/10/2016rb

**The minutes were reviewed with Board Member Pippitt after the meeting. Mr. Pippitt had misspoken and the minutes were correct as presented at the meeting.

IDAHO ELECTRICAL BOARD

Agenda Item No. 03

Negotiated Rulemaking

PRESENTER: Bob Scott, Chairman

OBJECTIVE: Review proposed amendments to the National Electrical Code AND proposed rule on submersible well pumps.

ACTION: Informational

BACKGROUND:

**PROCEDURAL
HISTORY:**

ATTACHMENTS: Draft proposal on submersible well pumps.





State of Idaho
DIVISION OF BUILDING SAFETY

Building a Safer Idaho

C.I. "BUTCH" OTTER Governor
C. Kelly Pearce Administrator

1090 East Watertower Street
Suite 150
Meridian, Idaho 83642
Main # 1-800-955-3044
Fax # 1-877-810-2840
dbs.idaho.gov

Date: 6/30/2016

**Issue: The Permanent Installation of Directly Connected
Submersible Well Pumps in Bodies of Water.**

Background:

The 2016 Idaho Legislature enacted House Bill 643, and the Governor signed that bill on Tuesday, April 5, which changes the regulatory backdrop for the installation of submersible well pumps in lakes and other bodies of water in Idaho. A collaborative effort, between the Division of Building Safety, the Idaho Electrical Board, pump manufacturers, installers, end users, Department of Lands and other interested parties, began on April 15, 2016. This collaborative is tasked with providing rules for the safe installation of submersible well pumps within the State of Idaho.

Policy:

It has been the duty of the submersible pump collaborative, to identify and propose standardized practices with the regard to new installations, and repair and replacement of existing installations, of submersible well pumps employed in lakes, rivers, ponds, and streams in Idaho, and shall supplement, or improve upon, the requirements imposed by authority having jurisdiction (AHJ), and/or the requirements of adopted National Electrical Code (NEC), NFPA 70.

This policy, as proposed by the collaborative, amends NEC Article 682, for both new installations, and for repair and replacement installations. Existing submersible well pump installations located in bodies of water, shall not be repaired without applying for an electrical permit. Permitted repairs shall comply with all of the requirements of NEC Article 682 and any Idaho State adopted amendments.

This policy is proposed as follows:

NEC Article 682 as Amended for New Installations/Repair and Replacement

682 Part I. General. *All aspects still apply.*

682 Part II. Installation

682.10 Electrical Equipment and Transformers. **Electrical equipment and transformers, including their enclosures, shall be specifically approved for the intended location. No portion of an enclosure for electrical equipment not identified for operation while submerged shall be located below the electrical datum plane.**

Add New: Exception. All submersible well pumps used in bodies of water, must be labeled and listed in compliance with any one of the following - UL778, UL1004, UL2111 or other AHJ approved standard, until the use of submersible well pump motors are listed and approved for use in bodies of water at a future date.

682.11 Location of Service Equipment. **On land, the service equipment for floating structures and submersible electrical equipment shall be located no closer than 1.5 m (5ft) horizontally from the shoreline and live parts shall be elevated a minimum of 300 mm (12 in.) above the electrical datum plane. Service equipment shall disconnect when the water level reaches the height of the established electrical datum plane.**

Add New: Exception. This rule shall not apply to service equipment that is located on or at the dwelling unit and is not susceptible to flooding.

682.12 Electrical Connections. **All electrical connections not intended for operation while submerged shall be located at least 300 mm (12 in.) above the deck of a floating or fixed structure, but not below the electrical datum plane.**

682.13 Wiring Methods and Installation. **Liquidtight flexible metal conduit or liquidtight flexible nonmetallic conduit with approved fittings shall be permitted for feeders and where flexible connections are required for services. Extra-hard usage portable power cable listed for both wet locations and sunlight resistance shall be permitted for a feeder or a branch circuit where flexibility is required. Other wiring methods suitable for the location shall be permitted to be installed where flexibility is not required. Temporary wiring in accordance with 590.4 shall be permitted.**

Add New: Exception No 1. Wiring methods such as HDPE schedule 80 electrical conduit or its equivalent or greater, and clearly marked at a minimum "Caution Electrical" to indicate that it contains electrical conductors shall be approved. It shall be buried whenever practical, and in accordance with other regulatory agency policies. The use of gray HDPE water pipe rated at 250 PSI (eg. SIDR-7 or DR-9) is suitable for use as a chase only when the following conditions are

met:

- A. When internal conductors are jacketed submersible pump cable.
- B. When used in continuous lengths, directly buried, or secured on a shoreline above and below the water line.
- C. When submersible pump wiring terminations in the body of water according to 682.13 Exception No. 2 are met.

Add New: Exception No 2. Any listed and approved splices required to be made at the submersible well pump itself, outside of a recognized submersed pump sleeve or housing, when wires are too large to be housed inside said sleeve, shall be covered with a non-metallic, impact resistant material, no less than .25 inches thick, such as heavy duty heat shrink or other equivalent method approved by the AHJ. (Eg. install a heat shrink over the sleeve or housing that the submersible well pump is installed in, and then recover (apply heat) the heat shrink over both the HDPE and the water line). At least 6” shall be over the sleeve and at least 12” over the HDPE and water line.

Add New: Exception No. 3. Pipe, conduit, PVC well casing, or other electrically unlisted tubing may be used as a chase (not as a raceway) to protect conductors or cables from physical damage. Conductors or cables within a chase shall be rated for the location.

682.14 Submersible or Floating Equipment Power Connections.

Submersible or floating equipment shall be cord – and plug-connected, using extra-hard usage cord, as designated in Table 400.4, and listed with a “W” suffix. The plug and receptacle combination shall be arranged to be suitable for the location while in use. Disconnecting means shall be provided to isolate each submersible or floating electrical equipment from its supply connection(s) without requiring the plug to be removed from the receptacle.

Existing Exception No. 1: Equipment listed for direct connection and equipment anchored in place and incapable of routine movement cause by water current or wind shall be permitted to be connected using wiring methods covered in 682.13.

Add New: Exception No. 2. Submersible well pumps shall be considered directly connected and shall be anchored in place. Ballast is an acceptable form of anchoring.

A. Type and Marking. The disconnecting means shall consist of a circuit breaker, a switch, or both, or a molded case switch, and shall be specifically marked to designate which receptacle or other outlet it controls.

Add New: Exception No. 1. Motor controller circuits (remotely located stop pushbutton, disconnect, relay, switch) in a non-metallic enclosure shall be accepted as a required disconnecting means when a controller location is not practical, or where terrain or other obstacle(s) prevent installation of actual operating motor controller in this location, and shall be placed no closer than five feet from but within sight of the shoreline,

and marked at a minimum “Emergency Pump Stop”, or “Emergency Stop” with other obvious indication on the visible side of the enclosure, that it is for a pump. It shall be elevated not less than 12” above the datum plane.

Add New: Exception No. 2. An equipotential plane is not required for disconnecting means with non-metallic enclosures.

B. Location. The disconnecting means shall be readily accessible on land, located not more than 750 mm (30 in.) from the receptacle it controls, and shall be located in the supply circuit ahead of the receptacle. The disconnecting means shall be located within sight of but not closer than 1.5 m (5 ft) from the shoreline and shall be elevated not less than 300 mm (12 in.) above the datum plane.

Add New: Exception. Motor controller circuits (remotely located stop pushbutton, disconnect, relay, switch) in a non-metallic enclosure shall be accepted as a required disconnecting means when its installation is not practical, or where terrain or other obstacle(s) prevent installation of actual operating motor controller in this location, and shall be placed no closer than five feet from but within sight of the shoreline, and marked at a minimum “Emergency Pump Stop”, or “Emergency Stop” with other obvious indication on the visible side of the enclosure, that it is for a pump. It shall be elevated not less than 12” above the datum plane.

682.15 Ground-Fault Circuit-Interrupter (GFCI) Protection. Fifteen (15) and twenty (20) ampere single-phase, 125 volt through 250 volt receptacles installed outdoors and in or on floating buildings or structures within the electrical datum plane area that are used for storage, maintenance, or repair where portable electric hand tools, electrical diagnostic equipment, or portable lighting equipment are to be used shall be provided with GFCI protection. The GFCI protection device shall be located not less than 300 mm (12 in.) above the established electrical datum plane.

Add New: Exception No. 1. For submersible pumps located in bodies of water, and are rated 60 amperes maximum, 230 volts maximum, shall have GFCI or Ground Fault Equipment Protection designed to trip at a maximum of 30 milliamps or less, protected by means selected by a licensed installer, meeting listing or labeling requirements, and inspected by the AHJ prior to submersion in bodies of water.

Add New: Exception No. 2. For installations or repair and replacement of submersible pumps located in bodies of water, that are rated over 60 amperes, and rated at any voltage, shall be evaluated by a qualified designer (Experienced Licensed Contractor), or involve Engineering or be engineered, for each specific application, with the utmost goal of public safety. Whenever possible, GFCI or Ground Fault Equipment Protection designed to trip at a maximum of 30 milliamps or less, meeting listing or labeling requirements, shall be installed, then inspected by the AHJ prior to submersion in bodies of water.

682 Part III.

682.30 Grounding. *All aspects still apply.*

682.31 Equipment Grounding Conductors.

A. Type. Equipment grounding conductors shall be insulated copper conductors sized in accordance with 250.122 but not smaller than 12 AWG.

B. *All aspects still apply.*

C. *All aspects still apply.*

D. *All aspects still apply.*

682.33 Bonding of Non-Current-Carrying Metal Parts. *All aspects still apply.*

682.33 Equipotential Planes and Bonding of Equipotential Planes. An equipotential plane shall be installed where required in this section to mitigate step and touch voltages at electrical equipment.

A. Areas Requiring Equipotential Planes. Equipotential planes shall be installed adjacent to all outdoor service equipment or disconnecting means that control equipment in or on water, that have a metallic enclosure and controls accessible to personnel, and that are likely to become energized. The equipotential plane shall encompass the area around the equipment and shall extend out not less than 900 mm (36 in.) in all directions from which a person would be able to stand and come in contact with the equipment.

Add New: Exception. Submersible pump control panels and remote control circuit panels used to disconnect submersible pumps, and that are enclosed in non-metallic enclosures, do not require equipotential planes.

B. Areas Not Requiring Equipotential Planes. Equipotential planes shall not be required for the controlled equipment supplied by the service equipment or disconnecting means.

Add New: Exception. All circuits rated 60 amperes maximum and 110-250 volts, any phase, shall contain ground fault protection, in accordance with 682.15, for the motor leads that are located in a body of water, at a minimum.

C. Bonding. Equipotential planes shall be bonded to the electrical grounding system. The bonding conductor shall be solid copper, insulated, covered or bare, and not smaller than 8 AWG. Connections shall be made by exothermic welding or by listed pressure connectors or clamps that are labeled as being suitable for the purpose and are of stainless steel, brass, copper, or copper alloy.

Other articles and sections of the adopted National Electric Code not specifically

addressed by House Bill 643 may apply.

This submersible pump collaborative acknowledges and accepts the reality of the hazards associated with electrical equipment in water. During the organizing and discussion of the collaborative concerns, it remains evident that all parties want to ensure the safe installation of submersible well pumps.

Thomas Bangle, MBA
Chairman
Idaho Submersible Pump Collaborative
Sandpoint Pump & Power
(208)263-0536
t.bangle@yahoo.com

IDAHO ELECTRICAL BOARD

Agenda Item No. 04

National Electrical Code

PRESENTER: Bob Scott, Chairman

OBJECTIVE: Accept amendments to the currently adopted National Electrical Code (NEC) or to adopt a new edition of this code.

ACTION: Accept, reject or modify proposed amendments or adopt a new edition of the NEC.

BACKGROUND: An electrical code collaborative has met several times; discussing whether to adopt the current edition or a new edition of the NEC.

PROCEDURAL HISTORY:

ATTACHMENTS: Documentation will be distributed at meeting.



IDAHO ELECTRICAL BOARD

Agenda Item No. 05

Submersible Well Pumps

PRESENTER: Bob Scott, Chairman

OBJECTIVE: Approve proposed bill on submersible well pumps.

ACTION: Accept, reject or modify standards for the use of the pumps and other electrical installations around bodies of water.

BACKGROUND: At the March 17th special meeting, the Board was asked by Senator Nonini and stakeholders in northern Idaho to reconsider the opposition to House Bill 615 as it relates to new and retro-fit systems used in lakes, rivers, ponds and streams. The bill would: 1) Add new section to Chapter 10, Title 54, Idaho Code; 2) NEC Articles 110.3(A), 110.3(B) and 682 would not apply to specific use of the pumps; 3) DBS would promulgate rules; 4) Two-year sunset clause; and 5) Bill would become effective upon sine die of the 2016 legislature.

It was suggested a collaborative group be assigned to find a reasonable standard or interim standard for the use of pumps and how they are wired, as well as negotiate standards for other electrical installations around bodies of water.

PROCEDURAL HISTORY:

ATTACHMENTS: See agenda item 03 for supporting documentation.



IDAHO ELECTRICAL BOARD

Agenda Item No. 06

Electrical Apprenticeship Standards

PRESENTER: Matt Rehl, Idaho Career & Technical Center

OBJECTIVE: Approve the Electrical Apprenticeship Standards.

ACTION: Accept or reject the Idaho Electrical Apprenticeship Training Program.

BACKGROUND: Idaho Career & Technical Education (ICTE) requested a time slot on the July 2016 Electrical Board Meeting agenda to provide an update to the Electrical Board on the apprenticeship standards ICTE has been working on.

ICTE has finished meeting with industry personnel and other stakeholders to develop an agreed upon set of industry standards for the didactic portion of the Idaho Electrical Apprenticeship training program.

PROCEDURAL HISTORY:

ATTACHMENTS: Electrical Apprenticeship Criticality Survey and Electrical Apprenticeship Standards Years one through four.



Idaho Electrical Apprenticeship Annual Related Instruction Courses

1. General Electrical Safety: Students will be able to					
Answer Options	Nice to Know	Need to Know	Critical to Know	Rating Average	Response Count
Explain what a material safety data sheet (MSDS/SDS) is and its requirements.	7	47	24	2.22	78
Explain safety procedures for trenches.	8	26	43	2.45	77
Explain safety for confined space.	7	28	41	2.45	76
Explain lockout and tagout.	1	11	65	2.83	77
Explain protective clothing to include eye and hearing protection.	3	28	46	2.56	77
Explain the use of a safety harness.	3	29	45	2.55	77
Explain safety for ladders and scaffolds.	4	24	48	2.58	76
State the purpose of arc-fault and ground-fault circuit interrupters.	6	39	31	2.33	76
Identify safe handling and use of hand and power tools.	4	32	41	2.48	77
<i>answered question</i>					78
<i>skipped question</i>					0

2. ELECTRICAL THEORY: Students will be able to					
Answer Options	Nice to Know	Need to Know	Critical to Know	Rating Average	Response Count
Understand Electrical Qualities, and Ohm's Law to determine the resistance of a resistor using the color code or ohmmeter; determine whether a resistor is operating within its power rating; select the proper formula for calculating electrical values.	26	38	13	1.83	77
Understand Static Electricity and Magnetism as it relates to static electricity, lightening protection, static charges, and to determine the polarity of an electromagnet when the direction of the current is known.	34	38	5	1.62	77
<i>answered question</i>					77
<i>skipped question</i>					1

3. ELECTRICAL CIRCUITS: Students will be able to					
Answer Options	Nice to Know	Need to Know	Critical to Know	Rating Average	Response Count
Understand Series Circuits to calculate values for voltage, current, resistance, and power for series circuits.	20	37	20	2.00	77
Understand Parallel Circuits to solve for missing values in a parallel circuit and calculate current values.	20	37	20	2.00	77
Solve Combination Circuits using Ohm's Law and the rules for parallel and series circuits.	23	38	16	1.91	77
<i>answered question</i>					77
<i>skipped question</i>					1

4. TOOLS: Students will be able to					
Answer Options	Nice to Know	Need to Know	Critical to Know	Rating Average	Response Count
Use Electrical Testing Equipment to measure resistance, measure voltage between phases and phase to ground; take an ampere reading of any load, diagram the proper connection of a watt meter, and recognize a wave form.	9	24	44	2.45	77
Understand Bending Conduit and identify methods, tools, and bends required in bending raceways.	6	38	33	2.35	77
<i>answered question</i>					77
<i>skipped question</i>					1

5. INTRODUCTION TO THE NATIONAL ELECTRICAL CODE (NEC): Students will use and interpret					
Answer Options	Nice to Know	Need to Know	Critical to Know	Rating Average	Response Count
General Requirements: NEC Articles 90, 100, and 110.	12	44	21	2.12	77
Boxes and Enclosures: NEC Articles 312, 314, and other appropriate NEC sections.	11	50	16	2.06	77
Cables: NEC Articles 320 through 340, and other appropriate NEC sections.	14	47	16	2.03	77
Raceways and Conductors: NEC Sections 110.14, 240.4, 300.19; NEC Articles 310, 342 through 378; Chapter 9 Tables; Annex C, and other appropriate NEC Sections.	10	46	21	2.14	77
General Provisions for One-Family Dwellings: NEC Articles 210, 220, 240, 250, 315, 402, 404, 406, 410, 422, and other appropriate NEC Sections.	30	39	8	1.71	77
Specific Provisions for One-Family Dwellings: NEC Articles 210, 410, 422, and other appropriate NEC sections.	31	37	9	1.71	77
Load Calculations for One-Family Dwellings: NEC Articles, 210, 220, 230, 250, 310, and other appropriate NEC sections.	36	31	11	1.68	78
Services and Electrical Equipment for One-Family Dwellings: NEC Articles 110, 225, 230, 240, 250, 300, 310, and other appropriate NEC sections.	27	41	9	1.77	77
Comprehensive Provisions for Multi-Family Dwellings: NEC Articles 210, 230, 240, 250, 310, Chapter 9, Tables 8 and 9, and other appropriate NEC sections.	36	30	10	1.66	76
Commercial Locations--General Provisions: NEC Articles 210, 220, 310, 410, 430, 440, 600, and other appropriate NEC sections.	25	42	9	1.79	76
Commercial Locations--Services, Feeders, and Provisions: NEC Articles 110, 215, 230, 250, 368, 408, and other appropriate NEC sections.	26	39	11	1.80	76
<i>answered question</i>					78
<i>skipped question</i>					0

6. SPECIAL OCCUPANCIES: Student will use and interpret

Answer Options	Nice to Know	Need to Know	Critical to Know	Rating Average	Response Count
Hazardous Locations: NEC Articles 500 through 516.	31	36	9	1.71	76
Health Care: NEC Article 517.	32	39	5	1.64	76
Other Special Occupancies: NEC Articles 518 through 551.	37	36	3	1.55	76
<i>answered question</i>					76
<i>skipped question</i>					2

7. Are there other student learning outcomes that should be included during this year of related instruction?		
Answer Options	Response Count	
	13	
1- NFPA70E Arc Flash Training, Osha10 training would cover most of the safety training listed above.		
2- Need to explain to students what equipment they expect to find in either residential, commercial or industrial facilities. Also include approximate pay associated with each field. I do not think that students these days know what is out there, especially when related to industrial facilities. We are required to obtain a journeyman license in Idaho, so they should be teaching more code as that is the only test that really matters to get a license.		
3- Be able to read a basic set of prints. At the least be able to identify electrical symbols.		
4- Variety is more important than mastery in an apprentice. Broad scope is the best foundation for future competence.		
5- First aid, CPR		
6- Teach students about work ethics and how to work.		
7- photovoltaic systems and lighting control systems.		
8- At this point in an apprentices instruction they should know how to identify and use tools safely. Have the ability to work safely on different job sites. They should become familiar with equipment, materials and the different types of installations and uses of electrical equipment.		
9- Basic hand tools, and power tools used. Common materials used and trade sizes. Teach them how to read a tape measure. Understanding Residential foundations and framing would be nice as well.		
10- OSHA training.		
11- being able to understand what is wanted and what is needed.		
12- TROUBLESHOOTING BASICS FOR BRANCH CIRCUITS AND GFCI/ AFCI FUNCTIONALITY.		
13- 10 Hour OSHA course for construction should be a minimum requirement for 1st year.		
<i>answered question</i>		13
<i>skipped question</i>		65

8. ELECTRICAL MATHEMATICS: Students will be able to					
Answer Options	Nice to Know	Need to Know	Critical to Know	Rating Average	Response Count
Apply Basic Trigonometry to solve problems for electrical circuits and conduit bending by using the Pythagorean Theorem, sines, cosines, and tangents.	17	46	10	1.90	73
<i>answered question</i>					73
<i>skipped question</i>					5

9. ALTERNATING CURRENT THEORY: Students will be able to					
Answer Options	Nice to Know	Need to Know	Critical to Know	Rating Average	Response Count
Circuits--Calculate values for AC and DC circuits.	9	51	13	2.05	73
Three-Phase Circuits--Calculate voltage and current values for wye and delta circuits.	8	47	17	2.13	72
Single-Phase Transformers--Calculate voltage, current, and turns.	19	38	16	1.96	73
Three-Phase Transformers--Calculate the voltage and current for connections and to supply both three-phase and single-phase loads.	17	39	16	1.99	72
<i>answered question</i>					73
<i>skipped question</i>					5

10. MOTORS: Students will be able to					
Answer Options	Nice to Know	Need to Know	Critical to Know	Rating Average	Response Count
Understand operating principals of three-phase and squirrel-cage motors, connect dual voltage motors and reverse a three-phase motor.	15	45	13	1.97	73
Understand the operation of different single-phase motor types, purpose of centrifugal switch and a start winding, and recognize the types of starting relays.	19	45	9	1.86	73
Perform motor load calculations as per NEC.	13	40	19	2.08	72
<i>answered question</i>					73
<i>skipped question</i>					5

11. NEC COMPLIANCE: Students will be able to use the NEC to comply with requirements for					
Answer Options	Nice to Know	Need to Know	Critical to Know	Rating Average	Response Count
Box Fill and Junction Box Sizing.	1	41	31	2.41	73
Conductor Ampacity Correction Factors.	1	35	37	2.49	73
Raceway Fill.	1	37	34	2.46	72
Grounding and Bonding.	2	27	44	2.58	73
<i>answered question</i>					73
<i>skipped question</i>					5

12. Are there other student learning outcomes that should be included during this year of related instruction?	
Answer Options	Response Count
	6
1- Reading Plans and understanding them.	
2- Anything code related.	
3- This is where service and feeder calcs should START.	
4- They should be learning basic electrical circuits used in the electrical industry. They should also become familiar with different wiring methods and the specific codes related to them.	
5- Blue Print Reading.	
6- Blueprint reading. NFPA 70E standard for electrical workplace safety and creating a safe work culture.	
<i>answered question</i>	
6	
<i>skipped question</i>	
72	

13. GENERAL ELECTRICAL SAFETY: Students will be able to					
Answer Options	Nice to Know	Need to Know	Critical to Know	Rating Average	Response Count
Apply NFPA70E to achieve an electrically safe work condition.	2	22	47	2.63	71
<i>answered question</i>					71
<i>skipped question</i>					7

14. BLUEPRINTS: Students will be able to					
Answer Options	Nice to Know	Need to Know	Critical to Know	Rating Average	Response Count
Apply Fundamental Print Reading Skills.	3	34	34	2.44	71
Read and Interpret Residential and Commercial Electrical Symbols.	3	37	31	2.39	71
Identify and Use the Proper Electrical Drawings and Plans for the Application.	3	39	29	2.37	71
Describe the Construction and Maintenance Process.	14	43	14	2.00	71
Use Plans and Drawings for Residential and Commercial Power and Lighting Systems.	5	35	31	2.37	71
<i>answered question</i>					71
<i>skipped question</i>					7

15. LOAD CALCULATIONS: Students will be able to					
Answer Options	Nice to Know	Need to Know	Critical to Know	Rating Average	Response Count
Determine Single Family Dwelling Unit Electrical Calculations,	11	49	11	2.00	71
Determine Multifamily Dwelling Electrical Calculations,	16	45	10	1.92	71
Determine Commercial Electrical Calculations,	14	46	11	1.96	71
<i>answered question</i>					71
<i>skipped question</i>					7

16. CONDUCTOR CALCULATIONS: Students will be able to					
Answer Options	Nice to Know	Need to Know	Critical to Know	Rating Average	Response Count
Perform Raceway and Box Calculations according to NEC rules,	0	38	33	2.46	71
Perform Conductor Sizing and Protection Calculations according to NEC rules,	0	30	41	2.58	71
Determine Voltage Drop Calculations according to NEC rules,	3	39	29	2.37	71
Apply Article 430 of the NEC in regards to motors,	7	41	22	2.21	70
Apply Article 450 of the NEC in regards to transformers,	10	40	21	2.15	71
<i>answered question</i>					71
<i>skipped question</i>					7

17. MOTOR CONTROLS: Students will be able to					
Answer Options	Nice to Know	Need to Know	Critical to Know	Rating Average	Response Count
Explain the Basic Principles of Motor Controls and use and interpret diagrams,	7	49	15	2.11	71
Understand Components of Magnetic Control Circuits to design controls and circuits using start/stop stations,	11	46	14	2.04	71
Use NEC to Apply Overcurrent Protection for Control Circuits,	7	40	24	2.24	71
Understand the Use of Indicator Lights, Illuminated Pushbuttons, and Selector Switch Truth Tables, including interpreting symbols on diagrams and reading truth tables.	18	46	7	1.85	71
Understand Reversing Motor Controls, including the operation of a reversing starter with interlocks, a reversing control station, a reversing control selector switch, reversing a single-phase motor, and reversing operations using limit switches.	16	45	10	1.92	71
Understand Sequencing Control and Master Stop Function, including interpreting diagrams and applying the master stop function to a process using motor controls.	18	40	12	1.91	70
Use and Interpret Electrical and Electronic Diagrams.	8	44	19	2.15	71
Understand Industrial Control Systems, including the numbering system used in control circuit diagrams, device arrangements to form logic functions, and the purpose of each logic function.	23	41	7	1.77	71
<i>answered question</i>					71
<i>skipped question</i>					7

18. Are there other student learning outcomes that should be included during this year of related instruction?	
Answer Options	Response Count
	5
1- Basic operational theory and installation practices for VFD's.	
2- Should start becoming familiar with PLC by now.	
3- PLC's and electronic motor controllers such as softstarts and VFD's.	
4- need to state blue print reading and understanding early in the program.	
5- Information from first two years not deemed critical for those years gets progressively more critical this year.	
<i>answered question</i>	
5	
<i>skipped question</i>	
73	

19. GENERAL NEC REQUIREMENTS: Students will be able to interpret and apply the requirements of the following NEC					
Answer Options	Nice to Know	Need to Know	Critical to Know	Rating Average	Response Count
Electrical Installation Requirements: Articles 90, 100, and 110.	4	33	33	2.41	70
<i>answered question</i>					70
<i>skipped question</i>					8

20. WIRING AND PROTECTION: Students will be able to interpret and apply the requirements of the following NEC					
Answer Options	Nice to Know	Need to Know	Critical to Know	Rating Average	Response Count
Use and Identification of Grounded Conductors, Branch Circuits, and Feeders: Articles 200, 210 and 215 .	1	27	42	2.59	70
Branch Circuit, Feeder, and Service Calculations: Article 220.	3	30	37	2.49	70
Outside Branch Circuits and Feeders, Services: Articles 225 and 230.	4	30	36	2.46	70
Overcurrent Protection: Article 240.	2	25	43	2.59	70
Grounding and Bonding: Article 250.	1	21	48	2.67	70
Surge Protective Devices: Article 285	15	40	14	1.99	69
<i>answered question</i>					70
<i>skipped question</i>					8

21. WIRING METHODS AND MATERIALS: Students will be able to interpret and apply the requirements of the following					
Answer Options	Nice to Know	Need to Know	Critical to Know	Rating Average	Response Count
Wiring Methods and Conductors for General Wiring: Articles 300 and 310.	2	30	38	2.51	70
Enclosures: Articles 312 and 314.	8	32	30	2.31	70
Cables: Articles 320, 330, 334, 338, and 340.	7	37	26	2.27	70
Metal Raceways: Articles 342, 344, 348, 350, 352, 356, 358, and 362.	4	37	29	2.36	70
Metal Wireways, Multioutlet Assemblies, Surface Metal Raceways, Cable Trays: Articles 376, 380, 386, 392.	12	39	19	2.10	70
<i>answered question</i>					70
<i>skipped question</i>					8

22. EQUIPMENT FOR GENERAL USE: Students will be able to interpret and apply the requirements of the following NEC					
Answer Options	Nice to Know	Need to Know	Critical to Know	Rating Average	Response Count
Flexible Cords, Flexible Cables, and Fixture Wires: Articles 400 and 402.	9	43	18	2.13	70
Switches, Receptacles, Cord Connectors, and Attachment Plugs: Articles 404 and 406.	5	37	28	2.33	70
Switchboards, Switchgear, and Panelboards: Article 408.	5	35	30	2.36	70
Luminaires, Lampholders, and Lamps: Article 410.	7	39	24	2.24	70
Lighting Systems Operating at 30 Volts or Less: Article 411.	20	37	13	1.90	70
Appliances, Fixed Electric Space Heating Equipment: Articles 422 and 424,	13	42	14	2.01	69
Motors, Motor Circuits, and Controllers; Air-conditioning and Refrigeration Equipment: Articles 430 and 440.	8	44	18	2.14	70
<i>answered question</i>					70
<i>skipped question</i>					8

23. SPECIAL OCCUPANCIES: Students will be able to interpret and apply the requirements of the following NEC Articles					
Answer Options	Nice to Know	Need to Know	Critical to Know	Rating Average	Response Count
Hazardous Locations: Articles 500 through 506.	11	48	11	2.00	70
Commercial Garages, Motor Fuel Dispensing Facilities: Articles 511 and 514.	16	44	10	1.91	70
Health Care Facilities: Article 517.	11	46	11	2.00	68
Assembly Occupancies, Carnivals, Fairs and Similar Events: Articles 518 through 525.	23	40	7	1.77	70
Agricultural Buildings: Article 547.	21	39	10	1.84	70
Temporary Installations: Article 590.	10	45	15	2.07	70
<i>answered question</i>					70
<i>skipped question</i>					8

24. SPECIAL CONDITIONS: Students will be able to interpret and apply the requirements of the following NEC Articles					
Answer Options	Nice to Know	Need to Know	Critical to Know	Rating Average	Response Count
Emergency Systems, Legally Required Standby Systems, Optional Standby Systems: Articles 700 through 702.	16	44	10	1.91	70
Remote-Control, Signaling, and Power-Limited Circuits: Article 725.	26	36	8	1.74	70
Fire Alarm Systems: Article 760.	17	37	15	1.97	69
<i>answered question</i>					70
<i>skipped question</i>					8

25. COMMUNICATION SYSTEMS: Students will be able to interpret and apply the requirements of the following NEC					
Answer Options	Nice to Know	Need to Know	Critical to Know	Rating Average	Response Count
Optical Fiber Cables and Raceways; Communications Systems: Articles 770 and 800 through 820.	37	29	4	1.53	70
<i>answered question</i>					70
<i>skipped question</i>					8

26. Are there other student learning outcomes that should be included during this year of related instruction?	
Answer Options	Response Count
	6
1- Basic instrumentation and controls, including PLC's and pressure, temperature, flow, control valve operations.	
2- Would like to see more PLC and Programming throughout the whole apprenticeship. The electrical industry is leaning towards that. Especially the industrial electrician.	
3- So we have a 5 year program are you going to address the training needs for the 5th year ?	
4- State Statutes & Regulations; Exam Preparation.	
5- Students need to understand bid documents and how those bid documents dictate/affect the project they are building. Understanding addenda, allowances and alternates as well as unit prices is very helpful.	
6- Items deemed less critical in years 1-3 become critical in the 4th year.	
<i>answered question</i>	
6	
<i>skipped question</i>	
72	

CONTENT STANDARD 1.0: INTRODUCTION TO ELECTRICAL WORK SAFETY

Performance Standard 1.1: General Safety

- 1.1.1 Explain what a material safety data sheet (MSDS/SDS) is and its requirements.
- 1.1.2 Explain safety procedures for trenches.
- 1.1.3 Explain safety for confined space.
- 1.1.4 Explain lockout and tagout.
- 1.1.5 Explain protective clothing to include eye and hearing protection.
- 1.1.6 Explain the use of a safety harness.
- 1.1.7 Explain safety for ladders and scaffolds.
- 1.1.8 State the purpose of arc-fault and ground-fault circuit interrupters.
- 1.1.9 Identify safety handling and use of hand and power tools.

CONTENT STANDARD 2: ELECTRICAL THEORY

Performance Standard 2.1: Electrical Qualities and Ohm's Law

- 2.1.1 Explain the structure of the atom.
- 2.1.2 Explain electron flow.
- 2.1.3 State the difference between insulators and conductors.
- 2.1.4 Explain the basic methods of producing electricity.
- 2.1.5 Describe electrical effects such as magnetism, light, and heat.
- 2.1.6 Define a coulomb.
- 2.1.7 Define an ampere.
- 2.1.8 Define an ohm.
- 2.1.9 Define a watt.
- 2.1.10 Determine the resistance of a resistor using the color code or an ohmmeter.
- 2.1.11 Determine whether a resistor is operating within its power rating.
- 2.1.12 Calculate different electrical values using Ohm's law.
- 2.1.13 Select the proper Ohm's law formula from a chart.

Performance Standard 2.2: Static Electricity and Magnetism

- 2.2.1 Discuss the nature of static electricity.
- 2.2.2 Discuss lightning protection.
- 2.2.3 Give examples of both nuisance and useful static charges.
- 2.2.4 Discuss the properties of permanent magnets.
- 2.2.5 Discuss the operation of electromagnets.
- 2.2.6 Determine the polarity of an electromagnet when the direction of the current is known.

CONTENT STANDARD 3: ELECTRICAL CIRCUITS

Performance Standard 3.1: Series

- 3.1.1 Discuss the properties of series circuits.
- 3.1.2 List three rules for solving electrical values of series circuits.
- 3.1.3 Calculate values of voltage, current, resistance, and power for series circuits.

Performance Standard 3.2: Parallel

- 3.2.1. Discuss the characteristics of parallel circuits.
- 3.2.2. State three rules for solving electrical values of parallel circuits.
- 3.2.3. Solve the missing values in a parallel circuit using the three rules and Ohm's law.
- 3.2.4. Calculate current values using the current divider formula.

Performance Standard 3.3: Combination

- 3.3.1. Define a combination circuit.
- 3.3.2. List the rules for parallel circuits.
- 3.3.3. List the rules for series circuits.
- 3.3.4. Solve combination circuits using the rules for parallel circuits, rules for series circuits, and Ohm's law.

CONTENT STANDARD 4: TOOLS

Performance Standard 4.1: Electrical Testing Equipment

- 4.1.1. Identify the use of Category I through Category IV meters.
- 4.1.2. Use an ohmmeter and measure any resistance in electrical equipment or conductor.
- 4.1.3. Measure voltage between phases and phase to ground.
- 4.1.4. Take an ampere reading of any load.
- 4.1.5. Diagram the proper connection of a watt meter.
- 4.1.6. State the operation characteristics of analog and digital meters.
- 4.1.7. Recognize the wave form on an oscilloscope.

Performance Standard 4.2: Bending Conduit

- 4.2.1. Identify the parts of tools used for bending.
- 4.2.2. Identify the methods and tools used in bending raceways.
- 4.2.3. Define and identify saddle, offset, concentric, and 90-degree bends.

CONTENT STANDARD 5: INTRODUCTION TO THE NATIONAL ELECTRICAL CODE (NEC)

Performance Standard 5.1: NEC Articles 90, 100, and 110

- 5.1.1. Understand how the NEC began and its purpose.
- 5.1.2. Understand how changes to the code evolve.
- 5.1.3. Understand the terminology, and format of the NEC.
- 5.1.4. State the roles of nationally recognized testing laboratories, the National Electrical Manufacturers Association, and the National Fire Protection Association.
- 5.1.5. Accurately evaluate a location as accessible, readily accessible, or not readily accessible.
- 5.1.6. Identify equipment classified as appliances.
- 5.1.7. State the four categories of branch circuits.
- 5.1.8. State the difference between a continuous load and a non-continuous load.
- 5.1.9. Determine minimum vertical clearances for each installation using the NEC.
- 5.1.10. Apply dedicated space requirements to electrical equipment to include the area that is to be clear of foreign systems unless protection is provided.
- 5.1.11. Determine the working clearances of any installation using the NEC.

- 5.1.12. State the difference between a branch circuit and a feeder.
- 5.1.13. State the difference between “grounded” and “grounding” as it applies to a conductor.
- 5.1.14. Define what “in sight” means in the NEC.
- 5.1.15. Give examples of damp, wet, and dry locations using the code book.
- 5.1.16. Determine which conductors are the neutral conductors.
- 5.1.1.7. Define a separately derived system using the NEC.

Performance Standard 5.2: Boxes and Enclosures--NEC Articles 312, 314, and other Appropriate NEC Sections

- 5.2.1. Determine the cubic inch capacity of boxes when installing conductors # 6 AWG and smaller.
- 5.2.2. State which items use volume allowances of conductor fill when calculating box fill.
- 5.2.3. State how identical switches or receptacles can be mounted side by side in a two gang box can have different cubic inch volume allowances.
- 5.2.4. Determine the box size when the number of conductors is known.
- 5.2.5. Know the minimum conductor length to be left inside a box.
- 5.2.6. Explain what must be accessible after installation.
- 5.2.7. State the mounting and supporting provisions for boxes and conduit bodies using the NEC.
- 5.2.8. Determine the type of box needed for various applications using the NEC.
- 5.2.9. Calculate for junction box sizing containing #4 AWG and larger conductors using the NEC

Performance Standard 5.3: Cables--NEC Articles 320 through 340, and other appropriate NEC sections

- 5.3.1. State the distance from the edge of the wood framing member a cable can be installed unless a steel plate is installed.
- 5.3.2. State the requirements for protection of cable in metal framing using the NEC.
- 5.3.3. State the sealing requirements in fire-resistant-rated construction when electrical penetrations are made.
- 5.3.4. Identify what cables are permitted in spaces used for environmental air.
- 5.3.5. Determine the support requirements for MC, AC, and nonmetallic-sheathed cable using the NEC.
- 5.3.6. Identify the conductors in a cable and use the NEC to state how certain conductors can be re-identified.
- 5.3.7. Determine underground installation provisions per the NEC.
- 5.3.8. Identify special application cables using the NEC (This is not to be for installation requirements as this is for first year students).

Performance Standard 5.4: Raceways and Conductors--NEC Sections 11.14, 240.4, 300.19; NEC Articles 310, 342 through 378; Chapter 9 Tables; Annex C, and other appropriate NEC Sections

- 5.4.1. Determine the general provisions for any raceway installation using the NEC.

- 5.4.2. Determine the type of raceways suited for individual installations.
- 5.4.3. Determine the support requirements for various raceways using the NEC.
- 5.4.4. Determine the provisions for nonmetallic and metallic flexible conduit using the NEC.
- 5.4.5. Calculate the electrical trade size conduit required for any circuit or feeder.
- 5.4.6. Determine basic conductor properties using the NEC.
- 5.4.7. Show conductor temperature limitations.
- 5.4.8. Determine the provisions for conductors connected in parallel.
- 5.4.9. Apply conductor ampacity correction factors to include continuous loads.

Performance Standard 5.5: General Provisions for One-Family Dwellings--NEC Articles 210, 220, 240, 250, 315, 402, 404, 406, 410, 422, and other appropriate NEC Sections

- 5.5.1. Calculate the minimum number of 15 and 20 amp branch circuits in a one-family dwelling.
- 5.5.2. Determine the requirements for single receptacles on individual branch circuits.
- 5.5.3. Determine the branch-circuit ratings allowed for general-purpose receptacles.
- 5.5.4. Demonstrate the layout of general-purpose receptacles in a dwelling.
- 5.5.5. Determine the receptacle rating allowed on various size branch circuits using the NEC.
- 5.5.6. Determine the requirements for receptacles around sink areas using the NEC.
- 5.5.7. Determine the requirements for lighting and switching using the NEC.
- 5.5.8. Determine how and when to use the white conductor as an ungrounded conductor.
- 5.5.9. Determine any general requirement for boxes using the NEC.
- 5.5.10. Determine any illumination requirement for entrances and exits.
- 5.5.11. Determine the allowable use of vegetation such as trees for the mounting of outlets.

Performance Standard 5.6: Specific Provisions for One-Family Dwellings--NEC Articles 210, 410, 422, and other appropriate NEC sections

- 5.6.1. Determine the required ampere rating for any receptacle or branch circuit in kitchens, pantries, dining rooms, breakfast rooms, and similar locations.
- 5.6.2. Determine the requirements for countertop receptacle placement using the NEC.
- 5.6.3. State the minimum number of small appliance branch circuits required and their application.
- 5.6.4. Determine the requirements for appliances both cord and plug and permanently connected.
- 5.6.5. Calculate the load requirements for appliance branch circuits.
- 5.6.6. State the specific provisions for GFCI placement.
- 5.6.7. Identify luminaries permitted in closets and its placement.
- 5.6.8. Define a bathroom by the NEC and discuss the circuit requirements for receptacles, lights and fans.
- 5.6.9. Determine the requirements for receptacles and lighting in attached garages, detached garages, and basements.

- 5.6.10. Determine the requirements for laundry rooms to include the clothes dryer.
- 5.6.11. Determine the lighting and receptacle requirements for attic, crawl space, and HVAC equipment.

Performance Standard 5.7: Load Calculations for One-Family Dwellings--NEC Articles, 210, 220, 230, 250, 310, and other appropriate NEC sections

- 5.7.1. Calculate the general lighting for a one-family dwelling.
- 5.7.2. Specify the volt-amp requirements for small appliance and laundry branch circuits.
- 5.7.3. Apply demand factors to the general lighting load.
- 5.7.4. Apply demand factors to fastened-in-place appliances.
- 5.7.5. Calculate feeder demand loads for household clothes dryers.
- 5.7.6. Calculate feeder demand loads for household cooking equipment.
- 5.7.7. Calculate feeder demand loads for HVAC equipment.
- 5.7.8. Calculate a one-family dwelling or feeder using the standard method.
- 5.7.9. Calculate a one-family dwelling or feeder using the optional method.
- 5.7.10. Calculate service and feeder conductors.
- 5.7.11. Calculate the minimum size neutral conductor.
- 5.7.12. Select the proper grounding electrode conductor.

Performance Standard 5.8: Services and Electrical Equipment for One-Family Dwellings--NEC Articles 110, 225, 230, 240, 250, 300, 310, and other appropriate NEC sections

- 5.8.1. Determine adequate strength for a mast supporting service-drop conductors.
- 5.8.2. Explain the use of service-entrance cable.
- 5.8.3. Define a service lateral and underground service conductors, and explain their provisions.
- 5.8.4. Determine clearances for service and outside overhead wiring.
- 5.8.5. Determine work space required for electrical equipment, services, and panels.
- 5.8.6. Define a panelboard, an enclosure, and a cutout box.
- 5.8.7. Determine the proper application and use of circuit breakers and fuses using the NEC.
- 5.8.8. Determine the appropriate conductor sizing using 310.15(B)(7) or Table 310.15 (B)(16).
- 5.8.9. Size the grounding electrode conductor, equipment grounding conductor, main bonding jumper, bonding jumpers on the supply side or load side of the main breaker or fuse on any one-family dwelling service.
- 5.8.10. Properly install grounded and grounding conductors in subpanels.
- 5.8.11. Prevent objectionable current flow in grounding conductors and equipment.
- 5.8.12. Properly install a panelboard in a separate building or structure.

Performance Standard 5.9: Comprehensive Provisions for Multi-Family Dwellings--NEC Articles 210, 230, 240, 250, 310, Chapter 9, Tables 8 and 9, and other appropriate NEC sections

- 5.9.1. Determine when more than one service can be installed on a multifamily building.

- 5.9.2. Determine the proper number of disconnects allowed on a service.
- 5.9.3. Determine proper access to a unit's disconnecting means by any occupant.
- 5.9.4. Properly install the grounding electrode conductors to the grounding electrode.
- 5.9.5. Determine the appropriate service or feeder conductor sizing using 310.15(B)(7) or Table 310.15 (B)(16) Determine outdoor receptacle placement.
- 5.9.6. Calculate voltage-drop.

Performance Standard 5.10: General Provisions for Commercial Locations--NEC Articles 210, 220, 310, 410, 430, 440, 600, and other appropriate NEC sections

- 5.10.1. Compare receptacle placement with that of one-family dwellings to show the difference.
- 5.10.2. Determine the receptacle requirements in a commercial bathroom.
- 5.10.3. Determine the sign outlet requirements in a commercial installation.
- 5.10.4. Determine the branch circuit requirements for motors and HVAC equipment.
- 5.10.5. Determine the volt-amp ratings for receptacles (single, duplex, quad, etc.).
- 5.10.6. Determine the maximum number of receptacles permitted on a 15 amp or 20 amp circuit.
- 5.10.7. Identify the NEC accessibility requirements for receptacles in guest rooms of hotels and motels.
- 5.10.8. Determine NEC requirements for showcase and show window.
- 5.10.9. Calculate general lighting load based on square-foot area.
- 5.10.10. Determine the provisions for fluorescent, HID, recessed, LED, and track lighting provisions.
- 5.10.11. Determine the proper use and restrictions when using luminaires as raceways.
- 5.10.12. Determine handhole access requirements.

Performance Standard 5.11: Provisions for Services, Feeders, and Provisions for Commercial Locations--NEC Articles 110, 215, 230, 250, 368, 408, and other appropriate NEC sections

- 5.11.1. Properly install both grounding and grounded conductors on the line side and load side of the service supply conductors.
- 5.11.2. Determine the conditions that require ground-fault protection of equipment.
- 5.11.3. Recognize separately derived systems.
- 5.11.4. Explain how to properly ground and bond separately derived systems.
- 5.11.5. Recognize and explain the use of busways.

CONTENT STANDARD 6: SPECIAL OCCUPANCIES

Performance Standards 6.1: Hazardous Locations--NEC Articles 500 through 516

- 6.1.1 Explain what a hazardous location is.
- 6.1.2. Determine if a classified location is Class I, II or III and if it is Division 1 or 2 using the NEC.
- 6.1.3. Identify the NEC requirements pertaining to commercial garages and repair and storage facilities.
- 6.1.4. Identify the NEC requirements for buildings in which aircraft are stored and repaired.

6.1.5. Identify the NEC requirements for a motor fuel dispensing facility.

Performance Standards 6.2: Health Care--NEC Articles 500 through 517

6.2.1. Identify basic health care terminology used in NEC.

6.2.2. Determine the grounding and bonding requirements of any health care facility.

6.2.3. Identify patient care areas as general care or critical care and their branch circuit requirements.

6.2.4. Determine the tamper-resistant requirements of pediatric facilities.

6.2.5. Define the types of essential systems.

Performance Standard 6.3: Other Special Occupancies--NEC Articles 518 through 551

6.3.1. Define “places of assembly” according to the NEC.

6.3.2. Determine manufactured building requirements.

6.3.3. Determine agricultural building requirements.

6.3.4. Determine requirements for mobile home parks and recreational vehicle parks.

CONTENT STANDARD 1.0: ELECTRICAL MATHEMATICS

Performance Standard 1.1: Basic Trigonometry

- 1.1.1. Define a right triangle.
- 1.1.2. Use the Pythagorean theorem to solve problems concerning right triangles.
- 1.1.3. Solve problems using sines, cosines, and tangents.

CONTENT STANDARD 2: ALTERNATING CURRENT

Performance Standard 2.1: Circuits

- 2.1.1. Discuss the difference between AC and DC.
- 2.1.2. Compute instantaneous values of voltage and current for a sine wave.
- 2.1.3. Compute peak, RMS, and average values of voltage and current.
- 2.1.4. Define the phase relationship of voltage and current in a pure resistive circuit.
- 2.1.5. Identify half-wave and full-wave rectifiers.

Performance Standard 2.2: Inductance in AC Circuits

- 2.2.1. Define the properties of inductance in an AC circuit.
- 2.2.2. Define inductive reactance.
- 2.2.3. Calculate the values of inductive reactance and inductance.
- 2.2.4. Define the relationship of voltage and current in a pure inductive circuit.
- 2.2.5. Calculate values for inductors connected in series and parallel.
- 2.2.6. Define reactive power.
- 2.2.7. Define the Q of a coil.

Performance Standard 2.3: Resistive-Inductive Series Circuits

- 2.3.1. Define the relationship of resistance and inductance in an AC circuit.
- 2.3.2. Define power factor.
- 2.3.3. Calculate the values of voltage, current, apparent power, true power, reactive power, impedance, resistance, inductive reactance, and power factor in an RL series circuit.
- 2.3.4. Calculate the phase angle for current and voltage in an RL circuit.

Performance Standard 2.4: Resistive-Inductive Parallel Circuits

- 2.4.1. Define the operation of a parallel circuit containing resistance and inductance.
- 2.4.2. Calculate the values of voltage, current, apparent power, true power, reactive power, impedance, resistance, inductive reactance, and power factor in an RL parallel circuit.
- 2.4.3. Calculate the phase angle for current and voltage in an RL parallel circuit.

Performance Standard 2.5: Capacitors

- 2.5.1. List three factors that determine the capacitance of a capacitor.
- 2.5.2. Discuss the electrostatic charge.
- 2.5.3. State the difference between polarized and non-polarized capacitors.
- 2.5.4. Calculate the values for series and parallel connections of capacitors.

Performance Standard 2.6: Capacitance in AC Circuits

- 2.6.1. Understand how capacitors function in an AC circuit.

- 2.6.2. Define capacitive reactance.
- 2.6.3. Calculate the value of capacitive reactance in an AC circuit.
- 2.6.4. Calculate the value of capacitance in an AC circuit.
- 2.6.5. Identify the relationship of voltage and resistance in an AC circuit.
- 2.6.6. Calculate the phase angle for current and voltage in an AC circuit.

Performance Standard 2.7: Resistive-Capacitive Series Circuits

- 2.7.1. Identify the relationship of resistance and capacitance in an AC series circuit.
- 2.7.2. Calculate the values of voltage, current, apparent power, true power, reactive power, impedance, resistance, inductive reactance, and power factor in an RC series circuit.
- 2.7.3. Calculate the phase angle for current and voltage in an RC series circuit.

Performance Standard 2.8: Resistive-Capacitive Parallel Circuits

- 2.8.1. Define the operation of a parallel circuit containing resistance and capacitance.
- 2.8.2. Calculate the values of voltage, current, apparent power, true power, reactive power, impedance, resistance, inductive reactance, power factor, and phase angle in an RC parallel circuit.

Performance Standard 2.9: Resistive-Inductive-Capacitive Parallel Circuits

- 2.9.1. Identify the characteristics of AC circuits that contain resistance, inductance, and capacitance connected in parallel.
- 2.9.2. Calculate the values of voltage, current, apparent power, true power, reactive power, impedance, resistance, inductive reactance, power factor, and phase angle in an RLC parallel circuit.

Performance Standards 2.10: Three-Phase Circuits

- 2.10.1. Identify the difference between single-phase and three-phase voltages.
- 2.10.2. Identify a three-phase delta or wye connection.
- 2.10.3. Calculate the voltage and current values for wye and delta circuits.

Performance Standards 2.11: Single-Phase Transformers

- 2.11.1. Understand the different types of transformers and how they work.
- 2.11.2. Calculate the values of voltage, current, and turns for a single-phase transformer.
- 2.11.3. Understand the polarity markings.

Performance Standard 2.12: Three-Phase Transformers

- 2.12.1. Identify the proper connections for three single-phase transformers to form a three-phase bank.
- 2.12.2. Calculate voltage and current for three-phase transformer connections.
- 2.12.3. Identify the proper connections for two single phase transformers to form a three-phase open-delta connection.
- 2.12.4. Calculate the values of voltage and current for a three-phase transformer used to supply both three-phase and single-phase loads.
- 2.12.5. Define harmonics.
- 2.12.6. Understand harmonic problems and their solution.

CONTENT STANDARD 3: MOTORS

Performance Standard 3.1: Three-Phase Motors

- 3.1.1. Understand the basic operating principals of a three-phase motor.
- 3.1.2. Define a rotating magnetic field.
- 3.1.3. Define the operating principals of a squirrel-cage motor.
- 3.1.5. Identify the correct connections for dual voltage motors.
- 3.1.6. Define the procedure for reversing a three-phase motor.

Performance Standard 3.2: Single-Phase Motors

- 3.2.1. Define the operation of various motor types.
- 3.2.2. Define the basic operation of a split-phase motor.
- 3.2.3. Understand the purpose of a start winding and how it works.
- 3.2.4. Understand the purpose of a centrifugal switch.
- 3.2.5. Recognize the types of starting relays.

Performance Standard 3.3: Motor Load Calculations as per NEC

- 3.3.1. Determine the full load current of any motor according to the NEC.
- 3.3.2. Understand the information given on a motor nameplate and its application.
- 3.3.3. Calculate the branch circuit wire size for any motor.
- 3.3.4. Determine the appropriate circuit protection for any motor.
- 3.3.5. Calculate overloads.
- 3.3.6. Understand the difference between overload protection and short-circuit/ground-fault protection.
- 3.3.7. Calculate a feeder for any set of motors.
- 3.3.8. Calculate the feeder overcurrent device.

CONTENT STANDARD 4: NEC COMPLIANCE

Performance Standard 4.1: Box Fill and Junction Box Sizing

- 4.1.1. Calculate box fill for any size wire and combination of devices.
- 4.1.2. Calculate pull and junction boxes.

Performance Standard 4.2: Conductor Ampacity Correction Factors

- 4.2.1. Calculate correction factors for temperature.
- 4.2.2. Calculate correction factors for raceway fill.
- 4.2.3. Calculate correction factors for continuous loads.
- 4.2.4. Calculate correction factors for any combination of the above.
- 4.2.5. Use Table 310.15(B)(16) and similar tables.
- 4.2.6. Apply NEC Chapter 9 notes for derate in nipples.

Performance Standard 4.3: Raceway Fill

- 4.3.1. Use NEC tables to calculate raceway fill using any combination of wire and cable sizes.
- 4.3.2. Use Annex C tables.
- 4.3.3. Calculate conduit nipple fill.

Performance Standard 4.5: Grounding and Bonding

- 4.5.1. Define objectionable current.
- 4.5.2. Identify a main bonding jumper.
- 4.5.3. Calculate the grounding electrode conductor.
- 4.5.4. Identify proper installations of grounding electrode systems.
- 4.5.5. Understand the purpose of bonding.
- 4.5.6. Calculate equipment grounding conductors.
- 4.5.7. Use Article 250 to properly ground and bond any system.
- 4.5.8. Use the NEC to answer any grounding question.

CONTENT STANDARD 1.0: GENERAL ELECTRICAL SAFETY

Performance Standard 1.1: Safety and NFPA 70E

- 1.1.1. Achieve an electrically safe work condition.
- 1.1.2. Interpret arc flash labeling.
- 1.1.3. Choose appropriate levels of PPE for the hazard.
- 1.1.4. Describe the steps to verify your testing equipment.
- 1.1.5. Explain lockout and tagout procedures.
- 1.1.6. Identify the use of Category I through Category IV meters.
- 1.1.7. Identify proper meter maintenance.
- 1.1.8. Explain the use of a safety harness.
- 1.1.9. Explain safety for ladders and scaffolds.
- 1.1.10. Explain what a material safety data sheet (MSDS/SDS) is and its requirements.
- 1.1.11. Explain safety procedures for trenches.
- 1.1.12. Explain safety for confined space.
- 1.1.13. Explain protective clothing to include eye and hearing protection.
- 1.1.14. State the purpose of arc-fault and ground-fault circuit interrupters.
- 1.1.15. Identify safety handling and use of hand and power tools.

CONTENT STANDARD 2.0: BLUEPRINTS

Performance Standard 2.1: Print Reading Fundamentals

- 2.1.1. Recognize site plan, floor plans, elevations, sectional views, wiring diagrams, details, and schedules.
- 2.1.2. Recognize types of electrical schedules to include fixtures, feeders, main switchboard, branch circuit panels, and transformers.
- 2.1.3. Demonstrate the application of building plans and specifications.
- 2.1.4. Locate specific information on building plans.
- 2.1.5. Research additional information from industry-related resources.

Performance Standard 2.2: Residential and Commercial Electrical Symbols

- 2.2.1. Read and interpret electrical symbols used in construction drawings.
- 2.2.2. Identify the electrical installation requirements for a building from symbols.
- 2.2.3. Determine aboveground and underground electrical distribution.
- 2.2.4. Determine electrical materials, measurements, and specifications.

Performance Standard 2.3: Electrical Drawings and Plans

- 2.3.1. Differentiate between the purposes and characteristics of drawings, plans and diagrams. Describe the purpose of and list the primary features included on each type of drawing and plan to include floor plans, pictorial drawings, orthographic elevations, orthographic views, application drawings, location drawings, detail drawings, assembly drawings, site plans, foundation plans, structural plans, and utility plans.
- 2.3.2. Identify the proper drawing or plan for the application.
- 2.3.3. Identify the proper drawing or plan for the application.

Performance Standard 2.4: Construction and Maintenance

- 2.4.1. Describe the different responsibilities of various construction personnel.

- 2.4.2. Identify the major steps on the construction process.
- 2.4.3. Describe the different responsibilities of various maintenance personnel.
- 2.4.4. Compare preventive and predictive maintenance.

Performance Standard 2.5: Residential and Commercial Power and Lighting Systems

- 2.5.1. Compare how power and lighting information is included on residential and commercial plans.
- 2.5.2. Describe the types of electrical equipment included on single-line diagrams
- 2.5.3. Describe the typical information included on light fixture schedules and how this information is linked to floor plans.
- 2.5.4. Describe the common types of electrical detail drawings.

CONTENT STANDARD 3.0: LOAD CALCULATIONS

Performance Standard 3.1: Single Family Dwelling Unit Calculations

- 3.1.1. Properly define a one-family dwelling.
Calculate the general lighting, general use receptacle, small appliance, and laundry demand load for a dwelling.
- 3.1.2. Calculate the appliance demand load for a dwelling.
- 3.1.3. Determine the dryer demand load for a dwelling.
- 3.1.4. Determine the cooking appliance demand load for a dwelling.
- 3.1.5. Determine the heating and air conditioning demand load for a dwelling.
- 3.1.6. Properly size the service equipment and service conductors for a dwelling using the standard calculation as per Article 220.
- 3.1.7. Properly size feeder conductors (main to sub-panel) for a dwelling.
- 3.1.8. Use the optional calculation for a dwelling as per Article 220.
- 3.1.9. Calculate and size the service neutral conductor in a dwelling (neutral load).

Performance Standard 3.2: Multifamily Dwelling Calculations

- 3.2.1. Properly define a multifamily dwelling.
Calculate the general lighting, general use receptacle, small appliance, and laundry demand load for a multifamily dwelling.
- 3.2.2. Calculate the appliance demand load for a multifamily dwelling.
- 3.2.3. Determine the dryer demand load for a multifamily dwelling.
- 3.2.4. Determine the cooking appliance demand load for a multifamily dwelling.
- 3.2.5. Determine the heating and air conditioning demand load for a multifamily dwelling.
- 3.2.6. Properly size the service equipment and service conductors for a multifamily dwelling using the standard calculation as per Article 220.
- 3.2.7. Properly size feeder conductors (main to sub-panel) for a multifamily dwelling
- 3.2.8. Use the optional calculation for a multifamily dwelling as per Article 220.
- 3.2.9. Calculate and size the service neutral conductor in a multifamily dwelling (neutral load).

Performance Standard 3.3: Commercial Calculations

- 3.3.1. Determine the lighting demand factor for any commercial building to include stores, hotels and motels, warehouses, hospitals, office buildings, schools, restaurants, etc.
- 3.3.2. Determine sign and show-window demand loads.

- 3.3.3 Determine the demand loads for multi-outlet assemblies.
- 3.3.4 Determine the receptacle demand loads for offices and banks.
- 3.3.5 Determine the receptacle demand load for general commercial applications.
- 3.3.6 Determine the demand loads for commercial kitchens.
- 3.3.7 Use the optional method for commercial demand load calculations.
- 3.3.8 Determine the demand load for manufactured home parks, recreational vehicle parks, and marinas.
- 3.3.9 Determine the ampacity of conductors based on the type of special equipment (e.g., welders, electrical vehicles, HVAC, signs, etc.).
- 3.3.10 Determine the service size for any commercial installation.

CONTENT STANDARD 4.0: CONDUCTOR CALCULATIONS

Performance Standard 4.1: Raceway and Box Calculations

- 4.1.1 Determine the cross-sectional area of any conductor using NEC Chapter 9, table 5.
- 4.1.2 Determine the cross-sectional area of compact conductors using NEC Chapter 9, Table 5(A).
- 4.1.3 Understand and apply raceway fill limitations.
- 4.1.4 Size any raceway for the required wire fill.
- 4.1.5 Define and size raceway nipples for required wire fill.
- 4.1.6 Calculate conductor fill when using various sizes and/or types of conductors.
- 4.1.7 Calculate raceway size for multi-conductor and optical fiber cables.
- 4.1.8 Determine raceway fill using Annex C of the NEC.
- 4.1.9 Size a wireway for conductor fill.
- 4.1.10 Properly size an outlet or junction box based on wire fill.
- 4.1.11 Properly calculate the box fill of conductors, clamps, support fittings, devices or equipment, and grounding conductors.
- 4.1.12 Size pull and junction boxes for 4 AWG and larger wire.
- 4.1.13 Install conduits containing the same conductors the correct distance apart (4 AWG and larger).
- 4.1.14 Properly size the depth of pull boxes and conduit bodies when conductors enter opposite a removable cover.

Performance Standard 4.2: Conductor Sizing and Protection Calculations

- 4.2.1 Determine conductor properties.
- 4.2.2 Determine applications of insulation types based on NEC.
- 4.2.3 Determine conductor size for loads.
- 4.2.4 Determine conductor sizing based on the termination temperature rating.
- 4.2.5 Properly size the overcurrent device for loads.
- 4.2.6 Properly apply NEC Article 240 rules for small conductors.
- 4.2.7 Apply ampacity adjustment factors for temperature, wire fill, etc.
- 4.2.8 Identify when the neutral conductor is counted as current carrying when applying ampacity adjustment factors.
- 4.2.9 Apply ampacity adjustment to wireways.

- 4.2.10. Size conductors for continuous loads after ampacity adjustment.
- 4.2.11. Properly size feeders based on loads and adjustment factors.
- 4.2.12. Properly size tap conductors using the 10- and 25-foot rules (NEC Article 240).

Performance Standard 4.3: Voltage Drop Calculations

- 4.3.1. State the recommended voltage drop according the NEC.
Use the information in Chapter 9, Table 8 to calculate the resistance of any conductor
- 4.3.2. based on size and length.
- 4.3.3. Use the voltage drop formulas for single-phase and three-phase systems.
- 4.3.4. Size conductors to account for voltage drop.

Performance Standard 4.4: Motors: Article 430 of the NEC

- 4.4.1. Determine the full load current of any motor according to the NEC.
- 4.4.2. Size the branch circuit wire size for any motor.
- 4.4.3. Determine the appropriate circuit protection for any motor.
- 4.4.4. Use the motor name plate to size overloads.
Explain the difference between overload protection and short-circuit/ground-fault
- 4.4.5. protection.
- 4.4.6. Size a feeder for any set of motors.
- 4.4.7. Size the feeder short-circuit/ground-fault overcurrent device.

Performance Standard 4.5: Transformers: Article 450 of the NEC

- 4.5.1. Calculate the high leg voltage of a delta-connected transformer.
Calculate the primary and secondary line current of single- and three-phase
- 4.5.2. transformers.
- 4.5.3. Calculate the primary and secondary overcurrent protection for a transformer.
Calculate and select the proper conductor size for the primary and secondary of a
- 4.5.4. transformer.
- 4.5.5. Properly size the grounding electrode conductor and bonding jumpers.

CONTENT STANDARD 5.0: MOTOR CONTROLS

Performance Standard 5.1: Basic Principles of Motor Controls

- 5.1.1. Recognize ladder diagrams.
- 5.1.2. Recognize wiring/connection diagrams.
- 5.1.3. Recognize pictorial diagrams.
Use and interpret definitions, abbreviations, and graphic symbols used on motor control
- 5.1.4. diagrams.
Describe the function of pushbutton stations, solenoids, flow switches, pressure
- 5.1.5. switches, limit switches, and timing relays.
- 5.1.6. Define the basic operation of variable frequency drives.

Performance Standard 5.2: Components of Magnetic Control Circuits

- 5.2.1. Use a ladder diagram to illustrate a simple two-wire control circuit for a single-phase
motor operated by a float switch or similar device.
- 5.2.2. Use a ladder diagram to identify a simple start/stop station operating a motor starter.

- 5.2.3. Identify circuit types classified by power source (e.g., common control circuits, transformer control wiring, and separate control wiring).
- 5.2.4. Identify control devices and their function.
- 5.2.5. Identify remote-control circuits and their function.
- 5.2.6. Identify the components of a magnetic motor starter.
- 5.2.7. Design both two-wire and three-wire controls using start/stop stations and other devices such as float switches.
- 5.2.8. Design a circuit operating a motor starter using two or more start/stop stations.

Performance Standard 5.3: Overcurrent Protection for Control Circuits

- 5.3.1. Use the NEC to properly protect control circuits to include conductor sizes, overcurrent protection, and control transformers.

Performance Standard 5.4: Indicator Lights, Illuminated Pushbuttons, and Selector Switch Truth Tables

- 5.4.1. Understand the use of illumination in motor controls.
- 5.4.2. Interpret symbols used on diagrams.
- 5.4.3. Read truth tables.
- 5.4.4. Diagram the use of a selector switch on a three-wire control for a jogging application.

Performance Standard 5.5: Reversing Motor Controls

- 5.5.1. Understand the operation of a reversing starter with interlocks.
- 5.5.2. Understand the operation of a reversing control station.
- 5.5.3. Understand the operation of a reversing control selector switch.
- 5.5.4. Apply functional indicator lights to reversing controls.
- 5.5.5. Understand reversing operations using limit switches.
- 5.5.6. Understand the operation of reversing a single-phase motor.

Performance Standard 5.6: Sequencing Control and Master Stop Function

- 5.6.1. Interpret a diagram showing the sequencing of several motors.
- 5.6.2. Apply the master stop function to a process using motor controls.

Performance Standard 5.7: Sequencing Control and Master Stop Function

- 5.7.1. Describe the major characteristics of each type of electrical and electronic diagrams. Compare the special functions included on ladder diagrams and PLC programming diagrams.
- 5.7.2. Compare the applications and component arrangements of wiring diagrams and schematic diagrams.
- 5.7.3.

Performance Standard 5.7: Industrial Control System

- 5.8.1. Compare the common component types and voltage levels of power and control circuits.
- 5.8.2. Identify the common numbering systems that are used in control circuit diagrams. Describe the purpose of each logic function and the device arrangements used to form each one.
- 5.8.3.

CONTENT STANDARD 1.0: GENERAL NEC REQUIREMENTS

Performance Standard 1.1: Electrical Installation Requirements: Articles 90, 100, and 110

- 1.1.1. Identify scope of the NEC.
- 1.1.2. Define terms as they apply to the NEC.
- 1.1.3. Determine the proper termination of conductors.
Determine the kinds of warnings, markings, and identification a given installation requires.
- 1.1.4.
- 1.1.5. Determine the proper working clearance for any installation.
- 1.1.6. Determine proper voltage rating.

CONTENT STANDARD 2.0: WIRING AND PROTECTION

Performance Standard 2.1: Use and Identification of Grounded Conductors, Branch Circuits, and Feeders: Articles 200, 210 and 215

- 2.1.1 Properly identify a grounded conductor.
- 2.1.2 Properly apply the general provisions of Article 210.
- 2.1.3 Properly apply the branch circuits ratings of Article 210.
- 2.1.4 Properly install the required outlets of Article 210.
- 2.1.5. Calculate the minimum size and ampacity of any feeder.

Performance Standard 2.2: Branch Circuit, Feeder, and Service Calculations: Article 220

- 2.2.1. Calculate the loads for a single family dwelling.
- 2.2.2. Calculate the loads for a multifamily dwelling.
- 2.2.3. Calculate the loads for a commercial or industrial installation.

Performance Standard 2.3: Outside Branch Circuits and Feeders, Services: Articles 225 and 230

- 2.3.1. Determine the proper installation for conductors and lighting installed outdoors.
- 2.3.2. Determine vertical and horizontal clearance of overhead conductors.
- 2.3.3. Determine proper disconnecting means and installation.
- 2.3.4. Determine the proper installation and protection of conductors.

Performance Standard 2.4: Overcurrent Protection: Article 240

- 2.4.1. Properly size a standard overcurrent device to any conductor.
- 2.4.2. Properly apply the small conductor rules.
- 2.4.3. Calculate transformer secondary conductor protection.
- 2.4.4. Reference requirements for appliance protection.
- 2.4.5. Calculate tap conductor protection.
- 2.4.6. Reference protection for motors and air conditioners.

Performance Standard 2.5: Grounding and Bonding: Article 250

- 2.5.1. Define the difference between grounding and bonding.
- 2.5.2. Determine the proper grounding and bonding requirements of any system.
- 2.5.3. Properly size the main bonding jumper.
- 2.5.4. Properly size the grounding electrode conductor.
- 2.5.5. Properly size equipment grounding conductors.
- 2.5.6. Determine the various types of grounding conductors.
- 2.5.7. Design a proper grounding electrode system.

Performance Standard 2.6: Surge Protective Devices: Article 285

- 2.6.1. Determine the installation requirements of SPDs.
- 2.6.2. Discuss the difference between Type 1, Type 2, Type 3, and Type 4 SPDs and their use.

CONTENT STANDARD 3.0: WIRING METHODS AND MATERIALS

Performance Standard 3.1: Wiring Methods and Conductors for General Wiring: Articles 300 and 310

- 3.1.1. Determine how to route, splice, protect, and secure conductors and raceways.
Determine the general requirements for conductors such as insulation markings, ampacity ratings, and conductors to use in specific installations.
- 3.1.2.
- 3.1.3. Properly use the Article 310 tables.
- 3.1.4. Apply Chapter 9 tables.
Apply adjustment factors to any conductor based on wire fill, temperature, and continuous load.
- 3.1.5.
- 3.1.6. Define the meaning of conductor insulation lettering.
- 3.1.7. Determine when a neutral conductor is to be counted as a current-carrying conductor.

Performance Standard 3.2: Enclosures: Articles 312 and 314

- 3.2.1. Determine the use of any enclosure based on the conditions of use.
- 3.2.2. Determine the installation requirements for any enclosure.
- 3.2.3. Properly use boxes and fittings based on internal volume.
- 3.2.4. Determine the requirements for fill of boxes and fittings.
- 3.2.5. Properly size pull and junction boxes for No. 4 AWG conductors and larger.

Performance Standard 3.3: Cables: Articles 320, 330, 334, 338, and 340

- 3.3.1. Determine the installation requirements of Armored Cable.
- 3.3.2. Determine the installation requirements of Metal-Clad Cable.
- 3.3.3. Determine the installation requirements of Nonmetallic-Sheathed Cable.
- 3.3.4. Determine the installation requirements of Service-Entrance Cable.
Determine the installation requirements of Underground Feeder and Branch-Circuit Cable (Type UF).
- 3.3.5.
- 3.3.6. Relate temperature concerns, derating, etc. to other appropriate articles in the NEC.

Performance Standard 3.4: Metal Raceways: Articles 342, 344, 348, 350, 352, 356, 358, and 362

- 3.4.1. Determine the installation requirements of Intermediate Metal conduit.
- 3.4.2. Determine the installation requirements of Ridged Metal Conduit.
- 3.4.3. Determine the installation requirements of Flexible Metal Conduit.
- 3.4.4. Determine the installation requirements of Liquidtight Flexible Metal Conduit.
- 3.4.5. Determine the installation requirements of Rigid Polyvinyl Chloride Conduit.
- 3.4.6. Determine the installation requirements of Liquidtight Flexible Nonmetallic Conduit.
- 3.4.7. Determine the installation requirements of Electrical Metallic Tubing.
- 3.4.8. Determine the installation requirements of Electrical Nonmetallic Tubing.
- 3.4.9. Relate conductor fill, derating, etc. to other appropriate articles in the NEC.

Performance Standard 3.5: Metal Wireways, Multioutlet Assemblies, Surface Metal Raceways, Cable Trays: Articles 376, 380, 3886, 392

- 3.5.1 Determine the proper installation of a metal wireway.
- 3.5.2 Calculate the proper conductor fill of a metal wireway.
Calculate the proper size of a metal wireway based on conductor size and conduit entries.
- 3.5.3
- 3.5.4 Determine provisions for properly splicing conductors in a metal wireway.
- 3.5.5 Determine the proper installation of multioutlet assemblies.
- 3.5.6 Determine the proper installation of surface metal raceways.
- 3.5.7 Determine the proper installation and use of cable trays.

CONTENT STANDARD 4.0: EQUIPMENT FOR GENERAL USE

Performance Standard 4.1: Flexible Cords, Flexible Cables, and Fixture Wires: Articles 400 and 402

- 4.1.1. Identify requirements, applications, and construction specifications of cords and cables.
- 4.1.2. Select cords, cables, and fittings listed for specific applications.
- 4.1.3. Identify requirements and specifications of fixture wires.

Performance Standard 4.2: Switches, Receptacles, Cord Connectors, and Attachment Plugs: Articles 404 and 406

- 4.2.1. Determine types and uses of switches.
- 4.2.2. Determine types and uses of receptacles.

Performance Standard 4.3: Switchboards, Switchgear, and Panelboards: Article 408

- 4.3.1. Determine the specific requirements for switchboards, switchgear, and panelboards that control power and lighting circuits.
- 4.3.2. Properly identify the labeling requirements of each circuit in a panelboard or switchboard.
- 4.3.3. Determine proper termination of conductors in panelboards and switchboards.

Performance Standard 4.4: Luminaires, Lampholders, and Lamps: Article 410

- 4.4.1. Determine the general requirements of Article 410.

Performance Standard 4.5: Lighting Systems Operating at 30 Volts or Less: Article 411

- 4.5.1 Determine proper installation of low voltage lighting.

Performance Standard 4.6: Appliances, Fixed Electric Space Heating Equipment: Articles 422 and 424

- 4.6.1 Calculate and determine proper branch circuit ratings for any appliance.
- 4.6.2 Calculate and determine proper overcurrent protection for any appliance.
- 4.6.3 Determine the requirements for nonmotor appliances.
- 4.6.4 Determine proper disconnecting means.
- 4.6.5 Determine requirements for heating installations.

Performance Standard 4.7: Motors, Motor Circuits, and Controllers; Air-conditioning and Refrigeration Equipment: Articles 430 and 440

- 4.7.1. Determine the proper conductor size for any motor.
- 4.7.2. Determine the proper overcurrent protection for any motor.
- 4.7.3. Determine the proper disconnect for any motor.
Determine the proper overload protection for any motor and condition (easy start, hard start, etc.).
- 4.7.4.
- 4.7.5. Determine the minimum size feeder for a group of motors.
- 4.7.6. Determine the feeder overcurrent protection.
Determine proper size of circuits and overcurrent devices for air conditioning and
- 4.7.7. refrigeration equipment.
- 4.7.8. Determine the requirements for the disconnecting means of refrigeration equipment.

CONTENT STANDARD 5.0: SPECIAL OCCUPANCIES

Performance Standard 5.1: Hazardous Locations: Articles 500 through 504

- 5.1.1. Determine proper wiring of a hazardous location.

Performance Standard 5.2: Commercial Garages, Motor Fuel Dispensing Facilities: Articles 511 and 514

- 5.2.1 Define a major repair garage.
- 5.2.2 Define a minor repair garage.
- 5.2.3 Classify hazardous areas.
- 5.2.4 Determine proper wiring methods for a commercial garage of any type.
- 5.2.5 Define a Motor Fuel Dispensing Facility.
- 5.2.6 Determine proper wiring methods for Motor Fuel Dispensing Facilities.

Performance Standard 5.3: Health Care Facilities: Article 517

- 5.3.1. Define health care facility types.

- 5.3.2. Define General Care Areas and Critical Care Areas.
- 5.3.3. Discuss Essential Electrical Systems.
- 5.3.4. Determine proper wiring and grounding for a health care facility.

Performance Standard 5.4: Assembly Occupancies, Carnivals, Fairs and Similar Events: Articles 518 through 525

- 5.4.1. Discuss the proper wiring methods for places of assembly.
- 5.4.2. Discuss the proper wiring of carnivals, fairs, and similar events.

Performance Standard 5.5: Agricultural Buildings: Article 547

- 5.5.1. Determine the proper wiring method for any agricultural building.
- 5.5.2. Determine proper grounding for any agricultural building.

Performance Standard 5.6: Marinas and Boatyards: Article 555

- 5.6.1. Determine marina requirements using the NEC.

Performance Standard 5.7: Temporary Installations: Article 590

- 5.7.1. Determine the requirements for temporary installations.

CONTENT STANDARD 6.0: SPECIAL EQUIPMENT

Performance Standard 6.1: Electric Signs and Outline Lighting, Manufactured Wiring Systems: Articles 600 and 604

- 6.1.1. Determine proper installation and requirements of electric signs and associated lighting.
- 6.1.2. Determine proper installation of manufactured wiring systems.

Performance Standard 6.2: Cranes and Hoists: Article 610

- 6.2.1. Determine proper wiring of cranes and hoists.

Performance Standard 6.3: Elevators, Escalators, and Moving Walks: Article 620

- 6.3.1. Determine proper installation requirements of elevators, escalators, and moving walks.

Performance Standard 6.4: Audio Signal Processing, Amplification, Reproduction Equipment: Article 640

- 6.4.1. Determine proper wiring methods for audio equipment.

Performance Standard 6.5: Information Technology Equipment: Article 645

- 6.5.1. Define an IT room.
- 6.5.2. Determine proper installation of wiring in IT rooms.

Performance Standard 6.6: Swimming Pools, Spas, Hot Tubs, Fountains, and Similar Locations: Article 680

- 6.6.1. Determine proper electrical installations for swimming pools.
- 6.6.2. Determine proper electrical installations for spas and hot tubs.
- 6.6.3. Determine proper electrical installations for fountains.

CONTENT STANDARD 7.0: SPECIAL CONDITIONS

Performance Standard 7.1: Emergency Standby Power Systems, Legally Required Power Systems, Optional Standby Power Systems: Articles 700 through 702

- 7.1.1. Determine the proper installation of standby power systems.

- 7.1.2. Determine the difference between emergency standby, legally required standby, and optional standby power systems.

**Performance Standard 7.2: Remote-Control, Signaling, and Power-Limited Circuits:
Article 725**

- 7.2.1. Define circuit classes.
- 7.2.2. Determine proper installation and requirements of different circuit classes.

Performance Standard 7.3: Fire Alarm Systems: Article 760

- 7.3.1. Define nonpower-limited fire alarm circuits.
- 7.3.2. Define power-limited fire alarm circuits.
- 7.3.3. Determine the proper installation of fire alarm wiring using the NEC.
- 7.3.4. Determine where the use of GFCI and AFCI are restricted.
- 7.3.5. Determine proper cable types.

CONTENT STANDARD 8.0: COMMUNICATION SYSTEMS

**Performance Standard 8.1: Optical Fiber Cables and Raceways; Communications
Systems: Articles 770 and 800 through 820**

- 8.1.1. Determine proper installation of optical fiber cables.
- 8.1.2. Determine proper grounding of communications wiring and equipment.
- 8.1.3. Determine proper installations of communication wiring.

IDAHO ELECTRICAL BOARD

Agenda Item No. 07

Required Inspections

PRESENTER: Steve Keys, Deputy Administrator-Operations

OBJECTIVE: Require inspections on the following types of electrical installations: 1) Concealed work, 2) Service Equipment, 3) Temporary service installations and 4) Final inspection.

ACTION: Vote to accept or reject a proposed rule on the definition of inspections for the above-mentioned electrical installations.

BACKGROUND: April 2016 - A proposed rule, to define when an inspection is required on the above electrical services, was addressed. The Deputy Administrator-Operations offered, and the Board agreed, to issue the rulemaking notice, as well as place the topic *Required Inspections* as an action item on the July 21, 2016 Board meeting agenda.

PROCEDURAL HISTORY:

ATTACHMENTS: Proposed Legislation - Inspections



**IDAPA 07
TITLE 01
CHAPTER 08**

IDAPA 07 - DIVISION OF BUILDING SAFETY

07.01.08 - RULES GOVERNING ELECTRICAL SAFETY INSPECTIONS

000. LEGAL AUTHORITY.

The Idaho Electrical Board is authorized under Sections 54-1005, and 54-1006, Idaho Code, to adopt rules concerning the inspections of electrical installations referred to in Section 54-1001, Idaho Code.

(~~2-26-93~~)

001. TITLE AND SCOPE.

These rules shall be cited as IDAPA 07.01.02, "Rules Governing Electrical Safety Inspections," Division of Building Safety. These rules include criteria for the inspection of electrical installations, and govern the appeal of electrical inspection determinations where the Division has determined that an electrical installation does not meet the requirements of state law, the administrative rules promulgated by the electrical board, or the National Electrical Code as adopted by the state of Idaho.

002. WRITTEN INTERPRETATIONS.

This agency has written interpretations of this chapter.

(2-26-93)

003. ADMINISTRATIVE APPEALS.

This chapter does not allow administrative relief of the provisions outlined herein.

(2-26-93)

004. REQUIRED INSPECTIONS.

The permit holder must request inspections of the following types of electrical installations:

- 01. Concealed Work.** Before electrical installation work is backfilled, covered by drywall, insulation, or other building components, or embedded in concrete or similar substances, the permit holder shall request an inspection of the installation.
- 02. Service Equipment.** Before electrical service equipment is energized, the permit holder shall request an inspection of the installation.
- 03. Temporary Service Installations.** Before a temporary electrical service is energized, the permit holder shall request an inspection of the installation.
- 04. Final Inspection.** Upon completion of the electrical installation, the permit holder shall request a final inspection.

005. POWER SUPPLY COMPANIES

The Division of Building Safety shall notify the power supplier when an electrical installation has been inspected and approved for the connection of service. In the event that the power supplier has not received notice from the division of building safety that the electrical installation has been inspected and improved, and deems it necessary to energize an electrical installation without delay to preserve life or property, the power company shall notify the division that the installation has been energized.

006. APPEALS OF ELECTRICAL INSPECTION INTERPRETATIONS

In order to determine the suitability of materials and methods of wiring and to provide for interpretations of the provisions of the National Electrical Code, the creation of an electrical appeals board is hereby authorized by the administrator of the Division of Building Safety, to be composed of three (3) members of the Idaho Electrical Board, or an electrical supervisor and two (2) members of the Idaho Electrical Board, as determined and selected by the administrator upon receipt of a written notice of appeal as set forth below. (7-1-98)

01. Notice of Appeal. A person, firm, or corporation making an electrical installation subject to the provisions of Title 54, Chapter 10, Idaho Code, may appeal, to the administrator, a decision by the Electrical Bureau chief, chief electrical inspector, or other electrical inspector, that a particular electrical installation is not in conformance with Idaho Code, these rules, or the National Electrical Code as adopted by Idaho law. An appeal must be lodged by filing a written notice of appeal with the administrator within ten (10) days of the date of issuance of a notice of defects issued pursuant to Section 54-1004, Idaho Code. The notice of appeal shall state in particular the reasons why the appellant contends that the notice of defects is incorrect. (7-1-98)

02. Filing Date. If mailed, the notice of appeal shall be considered filed as of the date of postmark. The mailing address for filing such notice of appeal shall be to the administrator, Division of Building Safety, P.O. Box 83720, Boise, Idaho, 83720-0028. (7-1-98)

03. Appeals Board. The members of the Idaho Electrical Board and other persons appointed by the administrator to act as the appeals board, are authorized to hold hearings at the Division of Building Safety in Meridian Boise, Idaho, to determine the merits of an appeal filed pursuant to this rule. (7-1-98)

04. Function of Appeals Board. The members of the Idaho Electrical Board, acting as an appeals board, shall not have the authority to grant variances from the National Electrical Code; its sole function as an appeals board shall be to determine whether the materials or method of wiring utilized by the appellant meets the requirements of the National Electrical Code. (11-5-81)

05. Appeals Hearing Fee. An appeals hearing fee of one hundred dollars (\$100) shall be charged to an appellant for each appeal brought before the appeals board. The appeals hearing fee shall accompany the notice of appeal. When the appeal is found in favor of the appellant, the appeals hearing fee shall be returned to the appellant. (11-5-81)

06. Conditions Disqualifying Board Member. No Idaho Electrical Board member shall sit on an appeals board in which he or his employer, employee, business partner or any person related to him, is the appellant in the matter. or where he has a pecuniary interest in the outcome of the matter to be decided by the appeals board. (7-1-98)

07. Rules of Evidence. The rules of evidence for the hearing are governed by the Idaho Administrative Procedures Act, Title 67, Chapter 52, Idaho Code. (11-5-81)

08. Limitations of Appeal. The filing of an appeal does not stay or discontinue a notice of correction, notice of violation, red tag, disconnect order, or notification to the power company not to energize, in situations where the defect is of a nature so as to be an imminent threat to life or property. (11-5-81)

09. Preliminary Order. Within five (5) days of the conclusion of the administrative hearing, the appeals board shall issue a preliminary order. The preliminary order will become a final order without further notice unless reviewed by the administrator, or review is requested by any party to the inspection tag appeal, pursuant to the provisions of Section 67-5245, Idaho Code. When a preliminary order is reviewed by the administrator, the administrator will issue a final order pursuant to the requirements of Sections 67-5245 and 67-5246, Idaho Code. (7-1-98)

10. Motions for Reconsideration. Motions for reconsideration of the appeal board's preliminary order or of the administrator's final order are not allowed.

006. EXEMPTION FROM ATTORNEY GENERAL'S ADMINISTRATIVE PROCEDURE RULES FOR CONTESTED CASES.

Pursuant to Section 67-5206(5), Idaho Code, the procedures contained in Subchapter B, "Contested Cases," of IDAPA 04.11.01, "Idaho Rules of Administrative Procedure of the Attorney General," Sections 100 through 799 do not apply to electrical inspection ~~interpretation~~ appeals. (7-1-98)

007. REASONS FOR EXEMPTION FROM ATTORNEY GENERAL'S ADMINISTRATIVE PROCEDURE RULES.

In order to protect consumers from unsafe electrical installations and to prevent unnecessary delays and increased costs in construction projects, the rules of procedure in this chapter are adopted to promote the speedy resolution of contested cases involving electrical inspection ~~interpretation~~ appeals. (7-1-98)

(7-1-98)

007. -- 999. (RESERVED)

IDAHO ELECTRICAL BOARD

Agenda Item No. 08

Idaho Code -- Title 54 Chapter 10

PRESENTER: Steve Keys, Deputy Administrator-Operations

OBJECTIVE: Adopt changes to Idaho Code Title 54 *Professions, Vocations, and Businesses*, Chapter 26, *Plumbing and Plumber*.

ACTION: Vote to accept or reject proposed legislation to update Title 54 Chapter 26, Idaho Code.

BACKGROUND: April 2016 - A potential rewrite of the electrical statute, Title 54 *Professions, Vocations, and Businesses* Chapter 10 *Electrical Contractors and Journeymen* was distributed. The proposal would change the fundamental way licensing is handled relative to the electrical trade, as well as bring consistency among the electrical, HVAC and plumbing trades.

The Deputy Administrator-Operations suggested the Board review the proposal; bringing it back to the July Board meeting as an action for possible endorsement.

PROCEDURAL HISTORY:

ATTACHMENTS: Documentation will be distributed at meeting.



IDAHO ELECTRICAL BOARD

Agenda Item No. 09

Residential Wireman License

PRESENTER: Warren Wing, Electrical Program Manager

OBJECTIVE: Address the industries request for a residential wireman license.

ACTION: Open floor for discussion of possible need to separate Residential Wireman License from other licensing. Discuss if the ratios need to be looked at differently for residential. Discuss the possibility of creating a “specialty license” for residential wiremen.

BACKGROUND: The Division has received calls from several contractors discussing the possibility of a residential wireman license. We have been approached by a Representative from Idaho who has concerns that his constituents cannot meet requirements for journeyman to apprentice ratios due to the inability to hire journeyman electricians. Other discussions have centered around ratios being changed for residential installation.

PROCEDURAL HISTORY:

ATTACHMENTS: No documentation



IDAHO ELECTRICAL BOARD

Agenda Item No. 10 Homeowners -- Primary or Secondary Residences

PRESENTER: Warren Wing, Electrical Program Manager

OBJECTIVE: To inform the Board of the interpretation of the “homeowners exemption”.

ACTION: Discuss if language should be changed to broaden the scope of the type of installations non-qualified persons can perform. Should an exemption be created to allow for research and development type installation on residential properties?

BACKGROUND: It has been discovered that homeowners have installed pumps in public waters adjacent to their property. We have also seen a substantial increase in the number of alternative energy installation in the State being performed by homeowners. The Statute specifically says individuals are exempt from licensing when performing work “in” their primary or secondary residences or associated outbuildings. My interpretation of this would be that the scope of work it intended to allow the homeowner to perform with limited to standard wiring methods that would be found in a home. I do not interpret this to allow homeowners to perform installation in or of “special occupancies”, “special equipment”, or under “special conditions” anywhere on their “property”. It would appear that the interpretation of the “homeowners exemption” has been too broad.

PROCEDURAL HISTORY:

ATTACHMENTS: Documentation will be distributed at meeting.



IDAHO ELECTRICAL BOARD

Agenda Item No. 11

Program Manager Report

PRESENTER: Warren Wing, Electrical Program Manager

OBJECTIVE: Update the Board on the Electrical program's current activities.

ACTION: Informational

BACKGROUND: This topic is addressed at all regularly scheduled Idaho Electrical Board meetings.

PROCEDURAL HISTORY:

ATTACHMENTS: Reports: 1) Electrical Journeyman First Exam Attempts; and 2) Permit Verification.



State of Idaho
 Electrical NOVs/Civil Penalties Issued
 04/01/2016 thru 06/30/2016

Case No	Started	Closed	Case Type	Fees Charged	Fees Paid	Balance Due	Offender	Status	Violation
ELE1604-0113	04/22/2016		NOV	100	0	100	T L Electric	ACTIVE	Failure to Correct
ELE1604-0159	04/29/2016		NOV	200	0	200	Keith Wunsch	ACTIVE	Unlicensed Contractor
ELE1605-0104	05/18/2016		NOV	200	0	200	Purdy Enterprises Inc DBA Precision Pump	ACTIVE	Failure to Permit, Knowingly Employing Unlicensed Ind.
ELE1606-0021	06/06/2016		NOV	100	0	100	B & J Electric Inc	ACTIVE	Knowingly Employing Unlicensed Ind.
ELE1606-0032	06/07/2016		NOV	100	0	100	Nephies Electric Inc	ACTIVE	Knowingly Employing Unlicensed Ind.
ELE1606-0033	06/07/2016		NOV	100	0	100	Dallin Brower	ACTIVE	Unlicensed Individual
ELE1606-0048	06/09/2016		NOV	300	0	300	North Western Irrigation	ACTIVE	Unlicensed Contractor, Knowingly Employing Unlicensed Ind.
ELE1606-0050	06/09/2016		NOV	100	0	100	Neils Olsen	ACTIVE	Unlicensed Individual
ELE1606-0052	06/09/2016		NOV	100	0	100	John Bosworth	ACTIVE	Unlicensed Individual
ELE1606-0055	06/09/2016		NOV	300	0	300	Mike Storey	ACTIVE	Unlicensed Contractor, Failure to Permit
ELE1604-0158	04/29/2016	05/02/2016	NOV	200	200	0	Will Gomez	PAID	Knowingly Employing Unlicensed Ind.

Fees Charged	Fees Paid	Fees Owing
\$1,800.00	\$200.00	\$1,600.00

12 cases currently in a pending status during review process

7/1/2016
3:41:38PM

State of Idaho
"Verification" Inspections by Inspector
For the Period 4/1/2016 thru 6/30/2016

AARON REYNOLDS

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<u>Permit No</u>	<u>Scheduled Date Completed Date</u>	<u>Remarks</u>	<u>Result</u>	<u>Notes</u>
VER1605-00002	05/31/2016		COMPLIANCE	(5/31/2016 3:40 PM ARE)
	05/31/2016			GABRIEL ADAMS CRUZ HVC APP 024978 ISS 12/8/15 EXP 12/31/20
	06/01/2016		COMPLIANCE	(6/1/2016 2:52 PM ARE)
	06/01/2016			BRIAN HADLEY JOURNEYMAN 021106 ISS 10/9/14 EXP 10/31/17
	06/01/2016		COMPLIANCE	(6/1/2016 2:55 PM ARE)
	06/01/2016			TYSON MELISH ELE-A-39493 ISS 9/22/08 EXP 6/30/20
	05/31/2016		COMPLIANCE	(5/31/2016 3:41 PM ARE)
	05/31/2016			RYAN TOMPKINS HVC APP 026682 ISS 5/19/16 EXP 5/31/21
	05/17/2016		COMPLIANCE	(5/18/2016 7:51 AM ARE)
	05/17/2016			ROSARIO MORALES HVC APPRENTICE HVC-A-2202 ISS 3/16/12 EXP 3/31/17
	05/17/2016		COMPLIANCE	(5/18/2016 7:47 AM ARE)
	05/17/2016			JOHN HENDER SR HVC APP 024858 ISS 11/19/15 EXP 11/30/20
	05/17/2016		COMPLIANCE	(5/18/2016 7:44 AM ARE)
	05/17/2016			MARVIN HEILSON HVC CON HVC-C-2430 ISS 2/1/05 EXP 8/31/18
	05/31/2016		COMPLIANCE	JOURNEYMAN HVC-J-2429 ISS 2/1/05 EXP 8/31/18
	05/31/2016			(5/31/2016 3:43 PM ARE) JEFF SINGLETON HVC J HVC-J-672 ISS 10/21/04 EXP 1/31/19
	05/31/2016		COMPLIANCE	(5/31/2016 3:44 PM ARE)
	05/31/2016			PATRICK J HAND HVC APP 024979 ISS 12/8/15 EXP 12/31/20
06/23/2016		COMPLIANCE	(6/24/2016 7:23 AM ARE)	
06/24/2016			ANDREW CHASE ELE-APP-018501 ISS 4/16/14 EXP 4/30/19	

7/1/2016
3:41:38PM

State of Idaho
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For the Period 4/1/2016 thru 6/30/2016

VER1605-00002	06/01/2016	COMPLIANCE	(6/1/2016 2:56 PM ARE)
	06/01/2016		JOSHUA SURERUS
			ELE-A-009667
	06/03/2016	COMPLIANCE	ISS 4/7/14 EXP 4/30/19
	06/03/2016		(6/7/2016 7:37 AM ARE)
			AUSTIN CASE
			ELE-A-026693
	06/08/2016	COMPLIANCE	ISS 5/20/16 EXP 5/31/21
	06/08/2016		(6/8/2016 4:18 PM ARE)
			BOBBY OROZCO
		ELE-A-025143	
		ISS 12/30/15 EXP 12/31/20	
06/08/2016	COMPLIANCE	(6/8/2016 4:20 PM ARE)	
06/08/2016		DOUG RUSSELL	
		ELE-C-33253	
		ISS 4/27/05 EXP 4/30/17	
		ELE-J-23155	
		ISS 7/28/02 EXP 7/31/17	
06/13/2016	COMPLIANCE	(6/13/2016 3:02 PM ARE)	
06/13/2016		MARSHALL KENNEY	
		ELE-SPEC-J 008991 SIGN	
06/23/2016	COMPLIANCE	ISS 5/4/11 EXP 5/31/17	
06/24/2016		(6/24/2016 7:22 AM ARE)	
		BRYCE K SUTTON	
		ELE-J-004400	
		ISS 5/2//314 EXP 5/31/17	
06/09/2016	COMPLIANCE	(6/13/2016 8:14 AM ARE)	
06/09/2016		RIGOBERTO ARLEAGA	
		HVC-J-009296	
		ISS 1/2/15 EXP 1/31/18	
		PLB SPECIAL- 020026	
		ISS 8/12/14 EXP 8/31/17	
06/01/2016	COMPLIANCE	(6/1/2016 2:54 PM ARE)	
06/01/2016		KENYON FURROWS	
		ELE-A-015915	
		ISS 6/20/13 EXP 6/30/18	

ALAN KLINE **9**

Permit No	Scheduled Date Completed Date	Remarks	Result	Notes
VER1602-00001	05/17/2016 05/17/2016		ADMIN TIME	(5/17/2016 4:08 PM AKL) wash state vehicle

7/1/2016
3:41:38PM

State of Idaho
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VER1602-00001	04/05/2016	COMPLIANCE	(4/5/2016 4:48 PM AKL)
	04/05/2016		nov. unlicensed contractor, noc. ground pivot tower to earth grond
			(4/5/2016 4:49 PM AKL)
			this job is located Highway 51 south of Mountain Home west on Young Rd. west to pivots
	06/17/2016	COMPLIANCE	(6/17/2016 4:54 PM AKL)
	06/17/2016		pursuing disconnect notice red tagged service. took pictures. email to Randall, Warren fill out request form. house has been red tagged by county building inspector. there was a permit pulled in 2015 by Mountain Home Electric no inspection made but email ok to energize was generated to IPCO.
	06/17/2016	COMPLIANCE	(6/17/2016 4:47 PM AKL)
	06/17/2016		solar installation bennett mountain rd. took pictures of equipment & installation emailed to Randall, Warren, Jimmy. left business card and red tag not to energize or cover call me
	06/24/2016	ADMIN TIME	(6/24/2016 4:04 PM AKL)
	06/24/2016		looked at house remodel went over what electrical needs to be updated with homeowner
		(6/4/2016 6:59 AM AKL)	
		residence 1825 s 10th e red tagged by Elmore county building inspector. the residence was energized before an electrical inspection was made. permit pulled by Mountain Home ele in March 2015 started to proceed with deenergize with IPCO	
05/12/2016	PASS	(5/16/2016 8:07 AM AKL)	
05/12/2016		web1605-01156, inspect food vendors	
		(5/16/2016 8:05 AM AKL)	
05/12/2016	PASS		
05/12/2016		web1605-01155, inspect carnival rides	
		(6/4/2016 7:02 AM AKL)	
06/03/2016	ADMIN TIME		
06/03/2016		advised installation of additional 500amp disconnect light industrial tire recycling plant	

BRAD HASTINGS **16**

<u>Permit No</u>	<u>Scheduled Date Completed Date</u>	<u>Remarks</u>	<u>Result</u>	<u>Notes</u>
VER1601-00004	06/03/2016		COMPLIANCE	(6/3/2016 1:22 PM BHA)
	06/03/2016			Check licence for Jerome Ferlitch number 020075 Master. At 2601 E Commercial ST. In compliance.
	06/30/2016		COMPLIANCE	(6/30/2016 1:44 PM BHA)
	06/30/2016			Stopped at 1100 E Chateau Dr. Meridian and checked licences for Robert M Lawrence. Licence no. 008961 journeyman. In compliance.

7/1/2016
3:41:38PM

State of Idaho
"Verification" Inspections by Inspector
For the Period 4/1/2016 thru 6/30/2016

Inspection ID	Date	Compliance Status	Inspector	Notes
VER1601-00004	04/13/2016	COMPLIANCE	(4/13/2016 1:50 PM BHA)	Checked licence compliance for Stuart Welton at 658 N Principle PL Meridian. Licence no. ELE-J-10854 is up to date.
	04/13/2016		(6/9/2016 2:05 PM BHA)	Checked licence compliance for Jason Westphal. Licence no. ELE-A-016497. In compliance.
	06/09/2016	COMPLIANCE	(5/9/2016 1:53 PM BHA)	At 1200 Eagle RD checked licineces for Jason Anderson ELE-J-000260. In compliance.
	06/09/2016		(5/26/2016 1:54 PM BHA)	Went to house on sunset maple in spurwing sub to check hot tub clearances. Had pool contractor get in touch with Andy Rose to answer questions
	05/06/2016	COMPLIANCE	(4/11/2016 11:54 AM BHA)	Checked licences at 5832 Bolsena Ave. Meridian Tim Salwei ELE-J-12055, Dallin Cherry ELE-A-023619 Jason Fortelny ELE-A-016014. All were in compliance.
	05/06/2016		(6/1/2016 1:09 PM BHA)	Checked licencese at 5851 N Carlese Ave, Meridian For James Gratiot lic. no. ELE-J-4983. In coplience,
	05/26/2016	COMPLIANCE	(4/12/2016 2:41 PM BHA)	Checked licence compliance for Ben Archibald
	05/26/2016		(4/19/2016 2:17 PM BHA)	While doing inspection on 4043 E Eldon Gray St. checked compliance for Jeffery Wells licence number ELE-J-29707 expires 12/31/16
	04/07/2016	COMPLIANCE	(4/13/2016 11:57 AM BHA)	Stopped at 3924 W Wapoot ST. Checked lincex of Ben Archibald number ELE-J-21980 is up to date.
	04/07/2016		(4/20/2016 2:16 PM BHA)	Stopped in to Chesterfield sub. to check licences. Electricians were working on a new home and they had been checked the day before by Andy so I moved on.
	05/31/2016	COMPLIANCE	(4/4/2016 11:24 AM BHA)	Stopped in Alpinepoint and stopped and checked lisences for Russell Thurston ELE-A-33400 also checked Kevin Thruston ELE-J-13995.
	05/31/2016		(4/22/2016 11:41 AM BHA)	Stopped at 3289 N Towerbridge Way and checked compliance for Nicholas Baumann ELE Jouryman no.016228 and Paul Max ELE Journeyman ELE-J-25501. Both in coplience.
	04/12/2016	COMPLIANCE		
	04/12/2016			
	04/19/2016	COMPLIANCE		
	04/19/2016			
	04/13/2016	COMPLIANCE		
	04/13/2016			
	04/20/2016	COMPLIANCE		
	04/20/2016			
	04/01/2016	COMPLIANCE		
	04/01/2016			
	04/22/2016	COMPLIANCE		
	04/22/2016			

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VER1601-00004	04/21/2016	COMPLIANCE		(4/22/2016 11:09 AM BHA) Coplience check on Patrick R Koomler. Licence no. Journyman 005627. Gary Stetson ele apprentice no. 024094. Both in compliance.
	04/21/2016			
	06/09/2016	COMPLIANCE		(6/9/2016 2:00 PM BHA) Checked licience compliance for Ben Zimmer Lic. no. ELE-J-03342. At address 3393 N Ten Mile Rd. In complianece.
	06/09/2016			

BRAD MYERS **3**

Permit No	Scheduled Date Completed Date	Remarks	Result	Notes	
VER1601-00005	06/20/2016	ver1601-0006	ADMIN TIME	(6/21/2016 9:50 PM BMY) Had to complete 11 inspection for the city of Twin Falls. This took 5 hours to complete	
	06/21/2016				
	06/21/2016		ADMIN TIME	(6/21/2016 9:51 PM BMY) Had 6 inspection for the city of Twin Falls. This took 3 hours to complete	
	06/21/2016				
	06/01/2016		COMPLIANCE	(6/1/2016 10:59 PM BMY) Called a number of contractor to find out the status of a few jobs that have been on the books for some time. Drove thur a few sub division in the burley city limit to try and card work but everything was very quite.	
	06/01/2016				

CURT BINGHAM **14**

Permit No	Scheduled Date Completed Date	Remarks	Result	Notes	
VER1601-00011	05/03/2016			(5/4/2016 7:21 AM CBI) checked licenses .gary thomas j-16337.jacob bogner-a 020237.both good	
	05/03/2016				
	04/20/2016			(4/20/2016 8:53 AM CBI) a mr nelton froma realty looking for information about inspections at 1280 kanaka rapids buhl.back in 2000 2001? find nothing elecrical for this address. told him to look for stickers at home and ,or a name of original home owner ect	
	04/20/2016				
	04/25/2016			(4/25/2016 8:30 AM CBI) called western fire extinguishers again.they have not got back to me for service	
	04/25/2016				
	04/25/2016			(4/26/2016 8:04 AM CBI) met western fire(fire service of idaho) to get fire extiguisher serviced	
	04/25/2016				

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VER1601-00011	05/03/2016	(5/4/2016 8:04 AM CBI)
	05/03/2016	checked for a permit for butte irrigation for a pivot south of twin falls where camaron ele installed pump panel.found no permit,and also found only one permit taken out for 2015,and one so far in 2016.discussed with tad from butte irrigation .they are still in busines ,but because their signing journeyman retired last fall the ball got dropped.no permits taken out but the two.discussed with brad myers and kevin.turned over to kevin and chris at this time
	05/04/2016	(5/5/2016 8:18 AM CBI)
	05/04/2016	met with inspectors and hr in shoshone for get togetherand lunch
	04/13/2016	(4/13/2016 4:17 PM CBI)
	04/13/2016	tried to set up appointment with western fire eq to service fire extinguisher.they will calland set up timeand location this next week as they are work out of the area this week
	06/02/2016	(4/13/2016 4:19 PM CBI)
	06/02/2016	received call from joe kendall from idaho power on problems with a service at308 boyd st in mutaugh.starting to gather info
	06/06/2016	(6/2/2016 3:48 PM CBI)
	06/06/2016	remodeling construction going on at 408broadway n in buhl.i could see open studs in windows so i stopped and questioned workers. they told me id have to talk to owner.i dont know who that is at this time.i gave him a card and asked him to have owner give me a call.i also put a door tag with my card on front entry door ilet gary jenks know about work at this address
06/08/2016	(6/7/2016 8:01 AM CBI)	
06/08/2016	had vehicle serviced	
	(6/9/2016 7:37 AM CBI)	
	checked licenses of 2 gietzen employees. at 3352 n 4000 n twin falls county.zachory olsen-j010452.kenneth l kestie-a 020974	

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VER1601-00011 06/29/2016
06/29/2016

05/25/2016
05/25/2016

04/27/2016
04/27/2016

04/28/2016
04/28/2016

(6/29/2016 4:04 PM CBI)
call from jarod with city of twin falls in regard to a bldg going up across from hospital and church. wanted to know if i new anything about it. i went over and checked things out. building was brought in and set down at this location..tf bldg dept put a stop work notice on door. and i put a red tag on door till we could find out what and who. several weeks ago geitzen ele put up a pole and service with a receptacle. ok to energize. i did not know what was going to happen here yet. while i was there owner showed up and wanted to know what was going on. i explained situation. owners name is tye reager. they are going to open a fruit stand. this bldg is wired with power, switches and receptacles, walls finished light not installed. he told me he wired it himself. he said he didnt realize he needed permits and inspections. not only with the state for electrical but bldg permits ect. i let owner know he needed to contact city bldg dept and we will go from there. tf bldg dept let me know they are going to require permits which will intell drawings ect. i told reager i will work with him ,with him getting a licenced contractor in to do job, inspect existing ect

(5/26/2016 8:34 AM CBI)
checked licenses. john goedhart jl4526, kris helmer a019259, taylor doxy a015772

(4/28/2016 7:51 AM CBI)
license check_dereky y smith-j 025933, ryan d carson a-022934, bryce waterman-a-024743, bradley hallman a-022934

(4/28/2016 3:41 PM CBI)
working on detailing vehicle

DAN STROUSE

18

<u>Permit No</u>	<u>Scheduled Date Completed Date</u>	<u>Remarks</u>	<u>Result</u>	<u>Notes</u>
VER1601-00013	06/29/2016 06/29/2016	new apprentice @Thorco, NIC tech buildin		(6/30/2016 7:12 AM DST) Garrerr Neil Miller 018766 exp 5/31/19
	06/06/2016 06/06/2016	Provident electric Rathdrum, Qual Ridge	COMPLIANCE	(6/7/2016 7:15 AM DST) Cory Hovey - 002908 journeyman expl 1/30/17
	06/16/2016 06/16/2016	Stan Weber w/ evergreen electric	COMPLIANCE	(6/17/2016 8:07 AM DST) Electrician / Apprentice 024167 issue 9/9/15 exp 9/30/20
	06/08/2016 06/08/2016	Baldwin Signs @ Dollar tree in Rathdrum	COMPLIANCE	(6/9/2016 7:20 AM DST) Jerry Fountain - ELE-SJ- 12735 , exp 12/31/17

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VER1601-00013	06/07/2016	Thorco Electric, Rathdrum NIC building	COMPLIANCE	(6/8/2016 7:28 AM DST) Josh Truman - journeyman-003558- exp 11/30/18
	06/07/2016			
	06/06/2016	Provident Electric, Quail Ridge Rathdrum	COMPLIANCE	(6/7/2016 7:17 AM DST) Jess Philips -024986 Apprentice exp 12/31/20
	06/06/2016			
	06/01/2016		COMPLIANCE	(6/2/2016 7:47 AM DST) Albert Mack - Jrny-00602 exp 4/30/18
	06/01/2016			
	06/06/2016	Provident Electric, Quail Ridge Rathdrum	COMPLIANCE	Reliable electric, teddy loop Rathdrum (6/7/2016 7:19 AM DST) Isaac Short - 020515 apprentice, exp 8/31/19
	06/06/2016			
	04/20/2016		PASS	(4/21/2016 8:02 AM DST) Delmar Hout app . 022565 - exp4/30/20
	04/20/2016			
04/25/2016	Waiting for sheetrock removal	COMPLIANCE	(4/21/2016 8:02 AM DST) All comercial electric (4/27/2016 8:42 AM DST) 4315 spiirt lake cutoff, . Informed of home being built without a permit. David Mathews , home owner . believed that since his home and his sons home next door @ 4317 spiritlake cutoff rd. didn't need electrical Permit. Gary Sonnen and I went up to check on this after being informed by Dan L. plumbing inspector. That home being built without a permit. Home already sheetrocked and Painted, insulation blown in ceiling, etc,. Home owner informed that he needed to permit his work and that if he pulled a homeowner permit that sheetrock would need to come down, or hire a contractor to verify all his wiring.	
04/25/2016				
04/28/2016		ADMIN TIME	(5/2/2016 7:07 AM DST) Permit pulled and now incompliance, permit covers two structures on same property.	
04/28/2016			(4/29/2016 7:18 AM DST) AVISTA MEETING, 2016 electrical requirements. 2hrs	
04/26/2016	12645 N. Chase rd. Post falls. Kootenai	ADMIN TIME	(4/27/2016 7:55 AM DST) New pole barn just getting underway , pole stood for building support. Pole stood is touching unfused conductors from transformer to Home. County inspector called to ask what to do about it, I advised he start by calling Kootenai Electric, to let them know what was happening. Should be fixed soon, before trusses are up and definately be fore siding.	
04/26/2016				

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VER1601-00013	04/19/2016	Boone electric 13964 N ohio, Rathdrum	COMPLIANCE	(4/20/2016 7:15 AM DST)
	04/19/2016			Jeremy Flynn- Jrny 003359 exp 11/30/18
	04/19/2016	Boone electric ,13964 ohio Rathdrum	COMPLIANCE	(4/20/2016 7:13 AM DST)
	04/19/2016			Mathew Patching app01547 - exp 6/30/18
	06/17/2016	Mark Michalek new jourman at Rathdrum	COMPLIANCE	(6/20/2016 7:40 AM DST)
	06/17/2016			Mark Michalek ele-j-28925 Journeyman for Rainbow electric
	05/04/2016	Lofty ridge , Rathdrum	COMPLIANCE	(5/4/2016 8:23 AM DST)
	05/04/2016			Bradley Salie, 004595 Journeyman exp. 9/30/17
	05/04/2016	Lofty ridgte, Rathdrum	COMPLIANCE	(5/4/2016 8:20 AM DST)
	05/04/2016			Joseph Delaney App, 025431 exp 2/28/21
	05/03/2016	Lofty rirdge, Rathdrum	COMPLIANCE	(5/4/2016 8:18 AM DST)
	05/03/2016			Eric Zotti, app 015564, exp. 5/31/18

DAVID SHERIDAN

4

Permit No	Scheduled Date Completed Date	Remarks	Result	Notes
VER1601-00015	04/18/2016 04/18/2016		COMPLIANCE	(4/19/2016 8:06 AM DSH) 1723 W Bellarive - Super D Electric Kyle Harkson - 023551 - 7/31/18 (j) Austin Cooper - 024806 - 11/31/20 (a) Nickolas Aker - 01+6548 - 8/31/18 (a)
	05/25/2016 05/25/2016		COMPLIANCE	(5/26/2016 7:27 AM DSH) Provident Electric @ 6845 Baudelaire. Matthew Counts ELE-J-26999 exp 7/31/17 Patrick Kuplack 025274 exp 1/31/21
	04/07/2016 04/07/2016		COMPLIANCE	(4/7/2016 2:51 PM DSH) 1384 Bellerive - CDA Rivercity Electric Jeffrey Doerschel ELE-J-12203 Exp 01/31/18 Charles Reid ELE-A-34190 Exp 01/31/20
	04/28/2016 04/28/2016		ADMIN TIME	(4/29/2016 7:26 AM DSH) 2 hour meeting with Avista Utilities. - at Best Western conference room.

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DICK SIVEY

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<u>Permit No</u>	<u>Scheduled Date Completed Date</u>	<u>Remarks</u>	<u>Result</u>	<u>Notes</u>
VER1601-00016	04/15/2016		COMPLIANCE	(4/15/2016 3:15 PM DSI)
	04/15/2016			recieved call from electrical contractor for McCall Brew Pub addition. Said he has quit job and cancelled permit. Went to job to see who was continuing job, talked to manager and owner, told me that they would get hold and have new contractor call me.
				Let them know that they could not proceed with job until new contractor and permits were in place
	06/03/2016		PASS	(6/3/2016 5:36 PM DSI)
	06/03/2016			had flat tire on way to the southfork river above Warren. Stopped at Les Schwab in McCall on way back and had repaired
	04/11/2016		ADMIN TIME	(4/11/2016 4:25 PM DSI)
	04/11/2016			spent a lot of time running down MC cable requirements for cutting and install of anti short bushings.
				Went to CED and Interstate Elec. got spec. sheets on cable and fitting requirements, UL listings and so-forth
				Talked to Randy, and contractor on job about specs.
	04/06/2016		ADMIN TIME	(4/6/2016 3:16 PM DSI)
	04/06/2016			Made copy's of CEE requirements, took to supply houses to post.
				Went to city building offices in McCall, cascade and Valley county, talked with building inspec. and went over new requirements
05/20/2016		PASS	(5/20/2016 3:15 PM DSI)	
05/20/2016			got call about job at McCall RV resort, installing 48 new spaces.	
			stopped to check permits and see if an electrical contractor was on site	
			only sewer lines were being installed and no electrical work has been performed. No electrical on site.	
04/01/2016		ADMIN TIME	(4/1/2016 5:26 PM DSI)	
04/01/2016			went to Les Schwab tire in McCall, to have snow tires changed.	
			Had to wait for 3 hours.	

DON GEIGER

1

<u>Permit No</u>	<u>Scheduled Date Completed Date</u>	<u>Remarks</u>	<u>Result</u>	<u>Notes</u>
VER1601-00017	04/15/2016	svc veh	ADMIN TIME	(4/18/2016 7:17 AM DGE)
	04/15/2016			svc veh oil chg

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GARY SONNEN

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<u>Permit No</u>	<u>Scheduled Date Completed Date</u>	<u>Remarks</u>	<u>Result</u>	<u>Notes</u>
VER1601-00019	06/24/2016 06/24/2016		COMPLIANCE	(6/27/2016 7:09 AM GSO) Leif Challender ELE spe 008815
	04/25/2016 04/25/2016		COMPLIANCE	(4/26/2016 7:21 AM GSO) With Dan Strouse to 4315 Spirit Lake cut off Road. Checking out reported job w/out permit or inspections.
	05/06/2016 05/06/2016		COMPLIANCE	(5/9/2016 9:21 AM GSO) Shane Shafer HVC J 2393
	05/06/2016 05/06/2016		COMPLIANCE	(5/9/2016 9:20 AM GSO) Tyler Dykes HVAC A 0264652
	05/06/2016 05/06/2016		COMPLIANCE	(5/9/2016 9:19 AM GSO) Cameron Raaum E A 023134
	05/06/2016 05/06/2016		COMPLIANCE	(5/9/2016 9:18 AM GSO) Jeff Osborne E J 7008
	05/06/2016 05/06/2016		COMPLIANCE	(5/9/2016 9:23 AM GSO) Jennifer L Fruechtl HVAC 003008 Pib 019244

GERET ROBINSON

4

<u>Permit No</u>	<u>Scheduled Date Completed Date</u>	<u>Remarks</u>	<u>Result</u>	<u>Notes</u>
VER1601-00021	05/09/2016 05/09/2016		ADMIN TIME	(5/9/2016 5:58 PM GRO) replace battery at les shawb 1.5 hrs
	04/22/2016 04/22/2016		COMPLIANCE	(4/22/2016 4:49 PM GRO) dusty lee blodgett ele-a-025438 s.mark hansen ele-j-3471 / ele-c-4621
	04/18/2016 04/18/2016		COMPLIANCE	(4/18/2016 5:08 PM GRO) chase sessions ele-m-023949 / ele-j-005199 austin michael clevenger-arce / ele-a-026000

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VER1601-00026	06/15/2016	ADMIN TIME	(6/14/2016 3:35 PM JAND)
	06/15/2016		Meeting 6/15/16 9AM @ 704 N. Ella Ave S/P with Eric to discuss finding report on permit # WEB1606-00549
			(6/16/2016 7:16 AM JAND)
			met with Eric and electrical contractor to go over scope of work. service change will be part of scope of work now.
	06/01/2016	COMPLIANCE	(6/2/2016 8:54 AM JAND)
	06/01/2016		william seitz j-025033 1/19
			eric burk a-026622 5/21
	04/07/2016	ADMIN TIME	(4/11/2016 7:22 AM JAND)
	04/07/2016		Met with Ron from Ron's Electric at Sandpoint Community hall to go over service change.
	04/06/2016	ADMIN TIME	(4/6/2016 4:40 PM JAND)
04/06/2016		Met with Mike from Mike's Electric to go over plans at 136 Washington St. Bonners Ferry for patient care area job.	
04/26/2016	ADMIN TIME	(4/26/2016 3:24 PM JAND)	
04/26/2016		oil change	
04/05/2016	ADMIN TIME	(4/6/2016 6:58 AM JAND)	
04/05/2016		Met with Karl Duncan at Outlet Water District to go over electrical requirements of new service.	
04/13/2016	ADMIN TIME	(4/13/2016 7:36 PM JAND)	
04/13/2016		Met with Gary at 413 St. Clair in Sandpoint to talk with owner of house.	

JEFF OAKES **1**

<u>Permit No</u>	<u>Scheduled Date Completed Date</u>	<u>Remarks</u>	<u>Result</u>	<u>Notes</u>
VER1601-00027	05/18/2016		ADMIN TIME	(5/18/2016 2:43 PM JOA)
	05/18/2016			oil change, tire rotation, rock chip repair

KEVIN HUBBLE **4**

<u>Permit No</u>	<u>Scheduled Date Completed Date</u>	<u>Remarks</u>	<u>Result</u>	<u>Notes</u>
VER1601-00035	05/05/2016		ADMIN TIME	(5/6/2016 7:40 AM KHU)
	05/05/2016			eye doctor 2hrs

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VER1601-00035	06/22/2016	ADMIN TIME	(6/22/2016 5:07 PM KHU)
	06/22/2016		7:00 o clock meeting in Merdian office
	05/03/2016	ADMIN TIME	(5/3/2016 5:05 PM KHU)
	05/03/2016		Dr Todd Walmen Boise ,Costco pharmacy
	05/20/2016	ADMIN TIME	(5/22/2016 2:47 PM KHU)
	05/20/2016		drive from eagle to cascade !.5 hrs cover for Dick Sivey

LARRY WHARTON **7**

Permit No	Scheduled Date Completed Date	Remarks	Result	Notes
VER1601-00036	04/07/2016		ADMIN TIME	
	04/07/2016			
	05/25/2016		ADMIN TIME	(5/25/2016 4:05 PM LWH)
	05/25/2016			Service car and check and work active permits
	04/13/2016		ADMIN TIME	(4/13/2016 5:58 PM LWH)
	04/13/2016			Write Nov's
	05/10/2016		PASS	(5/10/2016 3:41 PM LWH)
	05/10/2016			on phone with sprinkler shop on inspection requests for sawtooth valley. trying to get these permits straightened out and locations of permits.
	05/05/2016		PASS	(5/6/2016 9:27 AM LWH)
	05/05/2016			I recieved an anonamous phone call that three hispanic men were pulling wire in a resturant about to open after 6 in the evening. the old Cowboy Casina resturant at 111 first ave Hailey. At 6:30 I stopped by to see what was going on and no one was there but a coke cola distibutor dilivering product. I walked the building and the only wire I saw that had been pulled was speeker wire for the stereo system. I left and concluded my day.
	05/04/2016		PASS	(5/5/2016 7:44 AM LWH)
	05/04/2016			David Herman A-018697 Scott Napier J-001414
	05/04/2016		ADMIN TIME	(5/5/2016 7:42 AM LWH)
	05/04/2016			appreciation luchen

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MARK MONCARR

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<u>Permit No</u>	<u>Scheduled Date Completed Date</u>	<u>Remarks</u>	<u>Result</u>	<u>Notes</u>
VER1601-00039	04/04/2016		COMPLIANCE	(4/4/2016 2:08 PM MMON) Ele. Journeyman Miguel Cortes. License# ele-j-29989. Expires 4/30/18.
	04/04/2016			
	05/09/2016		COMPLIANCE	(5/9/2016 1:41 PM MMON) Elec. Apprentice David Kuhn. License#ele-A-21420. Expires 2/28/20.
	05/09/2016			
	05/09/2016		COMPLIANCE	(5/9/2016 1:40 PM MMON) Elec. Apprentice Timothy J. Redington License# 019906 expires 6/30/19.
	05/09/2016			
	04/04/2016		COMPLIANCE	(4/4/2016 2:10 PM MMON) Ele. Apprentice Justin R. Vigos. License# 004347. Expires 12/31/19.
	04/04/2016			
	04/04/2016		COMPLIANCE	(4/4/2016 2:06 PM MMON) Ele. Apprentice, Wesley Allen. License #011216 Expires 10/31/16.
	04/04/2016			

MARTIN LANGENWALTER

6

<u>Permit No</u>	<u>Scheduled Date Completed Date</u>	<u>Remarks</u>	<u>Result</u>	<u>Notes</u>
VER1601-00040	06/17/2016		COMPLIANCE	(6/17/2016 12:47 PM MLA) DROVE THROUGH THE OAKS SUBDIVISION AND FOUND NO LICENSED TRADE PROFESSIONALS WORKING TO DO A LICENSE CHECK
	06/17/2016			
	06/29/2016		COMPLIANCE	(6/29/2016 11:23 AM MLA) APPRENTICE MET ME TO UNLOCK GATE AND DOOR ONLY. HE DID NOT PERFORM ELECTRICAL WORK.
	06/29/2016			
				JASON STURDVANT #025012 12/30/2020

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VER1601-00040	06/30/2016 06/30/2016	COMPLIANCE	(6/30/2016 1:20 PM MLA) I RECEIVED AN EMAIL FROM RANDALL WHO HAD BEEN CONTACTED BY WARREN ABOUT A COMPLAING MADE THAT ELECTRICAL WORK WAS BEING PERFORMED WITHOUT PERMIT OR INSPECTIONS. THE SITE ADDRESS IS 11163 W HUNT AVE, NAMPA. THE COMPLAINT WAS MADE BY MARCUS LANGDON. 208-350-8773.
	06/27/2016 06/27/2016	COMPLIANCE	I CALLED AND SPOKE WITH MARCUS WHO SAID HE HAD BEEN WORKING HANGING DRYWALL FOR THE "OWNER" AND THAT HE HAD INFORMED HIM HE NEEDED PERMITS AND INSPECTIONS. THE "OWNER" TOLD HIM EVERYTHING WAS TAKEN CARE OF. MARCUS SAID THAT AFTER NOT BEING PAID FOR WORK HE HAD DECIDED TO REPORT THE WORK TO WARREN. I VISITED THE SITE TWICE AND WAS UNABLE TO FIND ANYONE WORKING. I LEFT A DOOR HANGER WITH MY CARD ON THE SECOND VISIT REQUESTING A PHONE CALL FROM THE OWNER. (6/27/2016 12:25 PM MLA) LICENSE CHECK
	06/09/2016 06/09/2016	COMPLIANCE	COREY REA J-21956 (6/9/2016 1:35 PM MLA) DO LICENSE COMPLIANCE WORK IN SOUTH ADA COUNTY FOR 1.5 HOURS AT END OF DAY
	06/17/2016 06/17/2016	COMPLIANCE	(6/17/2016 1:17 PM MLA) DROVE THROUGH BRIDGETOWER WEST SUBDIVISION BUT FOUND NO LICENSED TRADE PROFESSIONALS WORKING TO VERIFY LICENSES

MITCH DAY **1**

Permit No	Scheduled Date Completed Date	Remarks	Result	Notes
VER1601-00044	06/16/2016 06/16/2016		ADMIN TIME	(6/16/2016 10:52 AM MDA) oil change in DBS246 / milage 38,721. semi syn. blend

RICK DOYLE **1**

Permit No	Scheduled Date Completed Date	Remarks	Result	Notes
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7/1/2016
3:41:38PM

State of Idaho
"Verification" Inspections by Inspector
For the Period 4/1/2016 thru 6/30/2016

VER1601-00047 05/24/2016
05/24/2016

ADMIN TIME

(5/25/2016 4:26 PM RDO)
5/24/2016 RD.I traveled from Challis to DBS Pokey ti interview for the area 3 electrical supervisor position.I returned back to Challis the same day.

SAM KASPER

5

<u>Permit No</u>	<u>Scheduled Date Completed Date</u>	<u>Remarks</u>	<u>Result</u>	<u>Notes</u>
VER1601-00051	06/16/2016		ADMIN TIME	(6/16/2016 8:41 PM SKA) Attended NCI Meeting in Orofino
	06/16/2016			
	06/16/2016		COMPLIANCE	(6/16/2016 8:40 PM SKA) Liscence inspection Kammerer ELE SJ29171 expires 5/31/19
	06/16/2016			
	04/21/2016		ADMIN TIME	(4/21/2016 7:15 PM SKA) Took car in to get air conditioner serviced.
	04/21/2016			
	04/14/2016		ADMIN TIME	(4/15/2016 7:25 PM SKA) Took last years tires down and had them disposed of tread was down to wearbars Took car to Ford had plugs installed, oil changed, cabin filter changed. had car put on diagnostic computer to discover cause of check engine light
	04/14/2016			
	05/17/2016		ADMIN TIME	(5/17/2016 8:25 PM SKA) Attended employee appreciation lunch in Moscow
	05/17/2016			

SHELLY FARRIS

8

<u>Permit No</u>	<u>Scheduled Date Completed Date</u>	<u>Remarks</u>	<u>Result</u>	<u>Notes</u>
VER1601-00052	04/22/2016		COMPLIANCE	(4/22/2016 1:59 PM SFA) CHECKED ON LICENSE FOR WILLIAM KELSEY, STILL NO LICENSE. I CALLED GREG NELSON OWNER OF NELSON ELECTRIC AND LET HIM KNOW THAT HE WAS STILL UNLICENSED AND THAT I WOULD BE WRITING THEM UP IF HE DID NOT GET LICENSED ASAP.
	04/22/2016			
	04/21/2016		ADMIN TIME	(4/22/2016 1:38 PM SFA) I ATTENDED ELECTRICAL BOARD MEETING IN POCATELLO AND THEN INTERVIEWED CANDIDATES FOR NEW ELECTRICAL INSPECTOR POSISTION, AFTERWARDS HAD A MEETING WITH CHRIS AND ADAM.
	04/21/2016			

7/1/2016

3:41:38PM

State of Idaho
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VER1601-00052	04/11/2016	COMPLIANCE	(4/11/2016 2:58 PM SFA)
	04/11/2016		CHECKED LICENSE ON TWO NEW APPRENTICES, ALREADY CHECKED THE JOURNEYMAN ON THE JOB JAKOB MORGAN ELE-A-023279 6-30-20 SHAKODA PROCTOR ELE-A-025263 1-31-21
			(4/22/2016 1:51 PM SFA)
	04/14/2016	COMPLIANCE	CHECKED LICENSES OF 3 ELECTRICIANS WORKING AT JOB SITE 3495 E 650 N FOR NELSON ELECTRIC JEAN MICHELLE D KNICKERBOCKER M-001954 10-31-16 WILLIAM KELSEY 149 N 2ND WEST, TETON HAS NO LICENSE-STARTED WORK FOR NELSON TODAY, WILL CHECK BACK AND MAKE SURE HE IS LICENSED. CARLOS JOSE GORDO ELE-A-016076 07-31-18
	04/14/2016		(6/3/2016 11:31 AM SFA)
	06/03/2016	COMPLIANCE	CHECKED LICENSES ON ELECTRICIANS AT JOB SITE 4231 BLACKSTONE DRIVE IN RIGBY
	06/03/2016		NATHAN DRIEVER J-015581 05-31-16-EXPIRED BUT ONLY BY A COUPLE DAYS-TOLD HIM TO GET IT RENEWED ASAP.
			KADE GARNER ELE-A-023416 6-30-20 JUST FINISHED 1ST YEAR
			BRYCE K SUTTON J-004400 5-31-17 ALL EMPLOYEED BY EXTREME ELECTRIC (4/22/2016 1:42 PM SFA)
	04/22/2016	COMPLIANCE	CHECKED LICENSES OF 3 ELECTRICIANS WORKING AT JOB SITE 236 N 4300 E EMPLOYEE'S OF SYNERGY TRAVIS GALLUP J-016009 07-31-16 CODY BUCKLAND ELE-A-010466 07-31-16 REMINDED TRAVIS AND CODY THAT THEIR LICENSES WOULD EXPIRE IN JULY. JOSE F CARRILLO ELE-A-015096 03-31-18
	04/22/2016		IN COMPLIANCE

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VER1601-00052 05/16/2016
05/16/2016

COMPLIANCE

(5/17/2016 8:52 AM SFA)
I received a call from Kevin Gellings my electrical supervisor telling me that he had received a citizen complaint from a homeowner in Rexburg. He asked me to call the homeowner and check out the complaint. I called the homeowner Blair Kay and talked to him about the nature of the complaint. I called the homeowner and found out he had concerns about electrical installation of gas furnace and ac unit. His concerns were that HVAC people installed the electrical. I explained that they can from the disconnect to the unit. He told me that a new circuit had been run from the panel to the ac disconnect. I told the homeowner that I would come and take a look at it. In the meantime, I had spoke to Adam Bowcutt and he told me that he had done an electrical enforcement permit on Dale Gardner at this same location for the electrical on the ac unit. Dale Gardner is a licensed electrical contractor. I went to the job site at 2250 W 4200 S in Rexburg. I inspected the ac unit, the electrical panel and the new sub panel feeding the gas furnace. I found some bonding issues at both panels and the homeowner told me he had installed those. He corrected the issues while I was there. I did not find any concerns with the ac and furnace installs. I was able to final out enforcement permit ELE1605-00206.

05/24/2016
05/24/2016

COMPLIANCE

(5/25/2016 7:18 AM SFA)
CHECKED LICENSES ON ELECTRICIANS AT JOB SITE
3495 E 650 N IN MENAN

JEAN MICHEL D KNICKERBOCKER ELE-M-001954
10-31-16

JESSE HERRERA ELE-A-32126 4-30-20

JEREMY SIMMONS ELE-J-007700 8-31-16

JOSEPH HILL ELE-A-022904 5-31-20

NATHANIEL VANEVERY ELE-A-39663 1-31-20

IN COMPLIANCE, ALL WORKING FOR NELSON ELECTRIC

TIM DUCOMMUN

14

Permit No	Scheduled Date Completed Date	Remarks	Result	Notes
VER1601-00054	05/23/2016 05/23/2016	ver1601-ver1601-00054	ADMIN TIME	(5/24/2016 7:36 AM TDU) Avista, Contractor and Inspector meeting @ St. Maries.

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State of Idaho
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VER1601-00054	04/13/2016	ADMIN TIME	(4/13/2016 6:23 PM TDU)
	04/13/2016		Heath Moore ELE J 20475 Exp date 8/31/2018
		ver1601-ver1601-00054	
	05/23/2016	ADMIN TIME	(5/17/2016 6:45 PM TDU)
	05/23/2016		Inspector meeting @ Moscow
	04/20/2016	ADMIN TIME	(4/20/2016 6:23 PM TDU)
	04/20/2016		Timothy Grubham ELE-J-19518 Expires 12/2017
	04/13/2016	ADMIN TIME	(4/13/2016 6:26 PM TDU)
	04/13/2016		George Pearson ELE-J- 26131 exp 9-3-2018
	06/21/2016	ADMIN TIME	(6/21/2016 6:02 PM TDU)
	06/21/2016		Joseph Allenby J 24613 WEB1605-02353
	05/23/2016	ADMIN TIME	(5/24/2016 7:38 AM TDU)
	05/25/2016		Percy Meeting @ Lewiston.
	06/20/2016	ADMIN TIME	(6/15/2016 5:35 PM TDU)
	06/20/2016		Oil change& service DBS179
	06/21/2016	ADMIN TIME	(6/21/2016 5:54 PM TDU)
	06/21/2016		Jon Douglas Warringer J026278 exp 4/30/2019 Permit #web1606-01608.
	04/11/2016	ADMIN TIME	(4/11/2016 6:16 PM TDU)
	04/11/2016		Rotate and Ballance DBS179 wheels
	06/21/2016	ADMIN TIME	(6/21/2016 6:01 PM TDU)
	06/21/2016		Lance Dayton J 005336 web1605-02353
	06/21/2016	ADMIN TIME	(6/21/2016 5:56 PM TDU)
	06/21/2016		Thomas J. Barnesell 2 J000773 exp 5/31/2018 web1606-01608
	04/20/2016	ADMIN TIME	(4/20/2016 6:20 PM TDU)
	04/20/2016		Stillwater Electric ELE C-38812 Permit # WEB1604-00418 108 N 8th st Expires 5/31/2016
	04/13/2016	ADMIN TIME	(4/13/2016 6:20 PM TDU)
	04/13/2016		M&S Electric ELE C 39618 100 CDA Ave Harrison Permit # WEB 1604-00944 Exp date 11/30/2016

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3:41:38PM

State of Idaho
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For the Period 4/1/2016 thru 6/30/2016

TODD WILDING

9

<u>Permit No</u>	<u>Scheduled Date Completed Date</u>	<u>Remarks</u>	<u>Result</u>	<u>Notes</u>
VER1601-00056	05/11/2016	see notes	COMPLIANCE	(5/12/2016 7:55 AM TWI) spent time on the phone calling pivot contractors to find out who is relocating pivots and 2 new pivots in the Holbrook area west of Malad. walstrom is doing 3- 2 new and one relocate i still have 2-3 relocated pivots to find who is doing
	05/11/2016			i was letting them know that they still have to permit the relocated pivots most of the contractors i talked to knew that.
	06/01/2016	see notes	ADMIN TIME	(6/2/2016 8:21 AM TWI) met with franklin county building inspector went over ufer inspections and types of ufers
	06/01/2016			
	06/29/2016	see notes	COMPLIANCE	(6/29/2016 9:50 AM TWI) talked with owners of tube rental in Lava need to have contractor fix romex that feeds compresor building
	06/29/2016			
	05/18/2016	see notes	ADMIN TIME	(5/19/2016 7:53 AM TWI) drove to pocatello for a car wash and vac.
	05/18/2016			
	05/13/2016	see notes	COMPLIANCE	(5/16/2016 8:42 AM TWI) stopped by job new pivot being built found Benjamin Acevedo-s-010599
	05/13/2016			setting in truck waiting for journeyman to return
05/03/2016	see notes	ADMIN TIME	(5/3/2016 12:02 PM TWI) breakfast in pocatello office	
05/03/2016				
06/30/2016	see notes	PASS	(6/30/2016 11:57 AM TWI) stopped and visited with Cariboumotor and rewind	
06/30/2016			talked about some jobs and wells he is doing off solar	
04/01/2016	see notes	COMPLIANCE	(4/1/2016 11:13 AM TWI) was asked to stop by a shop in mccammon to see about permitting	
04/01/2016			and inside shop he said he would get a contractor to do work	
05/17/2016	see notes	FINDINGS	(5/18/2016 8:29 AM TWI) LDB elec asked if i would stop by a job on my way past it in Liberty he had ?'s on a remodel that he would be doing. we walked thru home	
05/17/2016				

TOM SAUNDERS

5

<u>Permit No</u>	<u>Scheduled Date Completed Date</u>	<u>Remarks</u>	<u>Result</u>	<u>Notes</u>
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7/1/2016
3:41:38PM

State of Idaho
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VER1601-00057	03/31/2016	COMPLIANCE	(4/4/2016 1:51 PM TSA) 3/31/16 I did a code check at Overland Park Apartments 1495 Tech Lane. I was there doing a final inspection on 20 units. There was a Journeyman with 2 apprentices working on the job at the time of inspection. They were all compliant Dana Jo Walliser Apprentice 022588 issued 4/9/15 expires 4/30/20 William Tracy Apprentice 023438 issued 6/26/15 expires 6/30/20 Douglas Monteith Journeyman ELE-J-14787 issued 11/17/06 expires 1/31/18
	04/05/2016		
	03/29/2016	COMPLIANCE	Total time spent 1 hr verifying licenses and 1/2 hr at DBSI office (4/4/2016 1:15 PM TSA) 3/29/16 carded electrician at 5047 N. Miguel Ave. I was doing a final inspection and he came over to hookup the dishwasher that was not finished. Company was also doing a rough-in in same neighborhood and Andy Rose checked the other electricians working there... Checked Journeyman's license and he was in compliance Electrician: Jeromy Richards ELE-J-26651 issued date 11/17/05 expiration date 12/31/17
	04/05/2016		
	04/15/2016	COMPLIANCE	Total of 1 hr checking license and writing verification at DBSI office. (4/15/2016 3:22 PM TSA) Was doing final inspection at: Ada County Juvenile Probation Services 124 W. Franklin I did a license check on Jacob Bryant license #ELE-J-31364 issued 6/8/09 exp 6/30/18 He was only electrician working on job...compliant
	04/15/2016		

State of Idaho
 “Verification” Inspections by Inspectors
 For the Period 04/01/2016 thru 06/30/2016

Inspector	Compliance	Admin Time	Pass	Fail	Red Tag Issued
Aaron Reynolds	18				
Alan Kline	3	4	2		
Brad Hastings	16				
Brad Myers	1	2			
Bruce Holland			3		
Chris Critser			3		
Craig Hammond	8	5			
Dan LaChapelle	28				
Dan Strouse	14	2	1		
David Sheridan	3		1		
Dick Sivey	1	3	2		
Don Geiger		6			
Gary Jenks		1			
Gary Sonnen	7				
Gary Williams	4	10			
Geret Robinson	2	2			
Jake Wood	1				
Jason Guerber	4	4			
Jeff Anderson	7	10			
Jeff Oakes		1			
Josh Nyman	4	2			
Kevin Hubble		4			
Larry Wharton		4	2		
Mark Boren	21	3			
Mark Moncarr	5				
Martin Langenwalter	6				
Mitch Day		1			
Rick Doyle	1				
Rick Young		5			
Rob Bafus	6	8			
Robert Crispin		51			
Sam Kasper		4			
Shelly Farris	6				
Tim Ducommun		14			
Todd Wilding	4	3	1		
Tom Saunders	5				
Travis Wright	11				

State of Idaho
 “Verification” Inspections by Inspectors
 For the Period 04/01/2016 thru 06/30/2016
 (ELECTRICAL ONLY)

Inspector	Compliance	Admin Time	Pass	Fail	Red Tag Issued
Aaron Reynolds	18				
Alan Kline	3	4	2		
Brad Hastings	16				
Brad Myers	1	2			
Dan LaChapelle	28				
Dan Strouse	14	2	1		
David Sheridan	3		1		
Dick Sivey	1	3	2		
Don Geiger		6			
Gary Sonnen	7				
Geret Robinson	2	2			
Jeff Anderson	7	10			
Jeff Oakes		1			
Kevin Hubble		4			
Larry Wharton		4	2		
Kevin Hubble		4			
Mark Moncarr	5				
Martin Langenwalter	6				
Mitch Day		1			
Rick Doyle	1				
Sam Kasper		4			
Shelly Farris	6				
Tim Ducommun		14			
Todd Wilding	4	3	1		
Tom Saunders	5				

IDAHO ELECTRICAL BOARD

Agenda Item No. 12

Compliance Program Report

PRESENTER: Terry Blessing, Compliance Program Supervisor

OBJECTIVE: Provide an update on the statewide compliance program.

ACTION: Informational

BACKGROUND: This topic is addressed at all regularly scheduled Idaho Electrical Board meetings.

PROCEDURAL HISTORY:

ATTACHMENTS: No documentation



IDAHO ELECTRICAL BOARD

Agenda Item No. 13

Operational Report

PRESENTER: Steve Keys, Deputy Administrator-Operations

OBJECTIVE: Provide an update on the daily operations of the Electrical program and division.

ACTION: Informational

BACKGROUND: This topic is addressed at all regularly scheduled Idaho Electrical Board meetings.

PROCEDURAL HISTORY:

ATTACHMENTS: No documentation



IDAHO ELECTRICAL BOARD

Agenda Item No. 14

Administrator Report

PRESENTER: C. Kelly Pearce, Administrator

OBJECTIVE: Provide an overview of the Division's current activities.

ACTION: Informational

BACKGROUND: This topic is addressed at all regularly scheduled Idaho Electrical Board meetings.

**PROCEDURAL
HISTORY:**

ATTACHMENTS: No documentation



IDAHO ELECTRICAL BOARD

Agenda Item No. 14a

Financial Report

PRESENTER: Fred Sisneros, Financial Manager

OBJECTIVE: Review the Idaho Electrical Board's Financial report.

ACTION: Informational

BACKGROUND: This topic is addressed at all regularly scheduled Idaho Electrical Board meetings.

PROCEDURAL HISTORY:

ATTACHMENTS: Financial report





Division of Building Safety
 ELECTRICAL BOARD FUND 0229-01
 Fiscal Year 2016 Financial Statements
 As of 05/31/2016

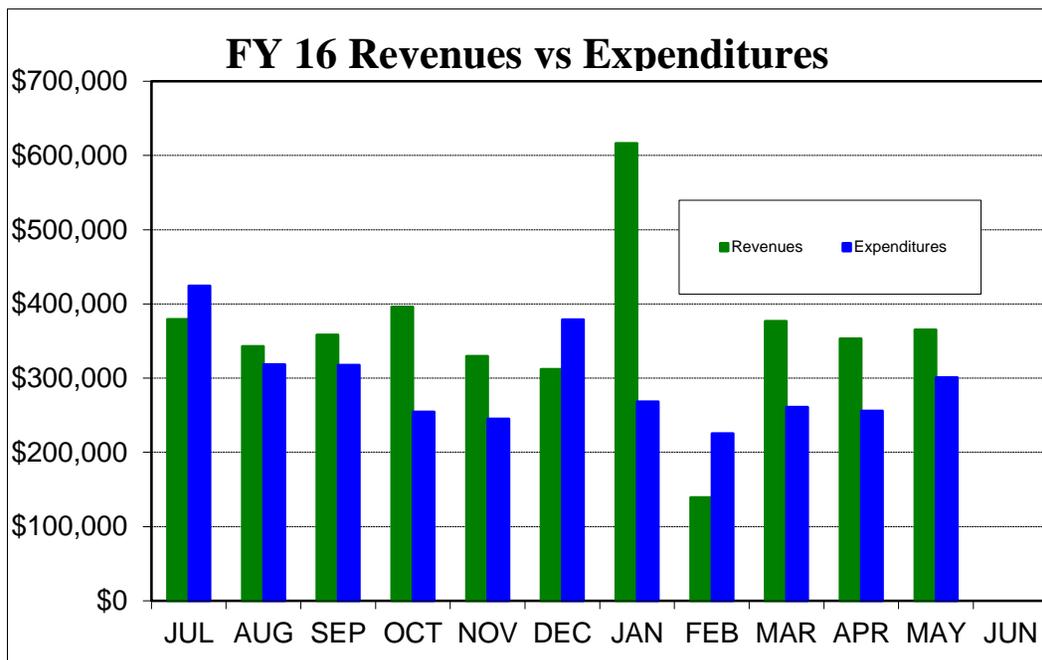
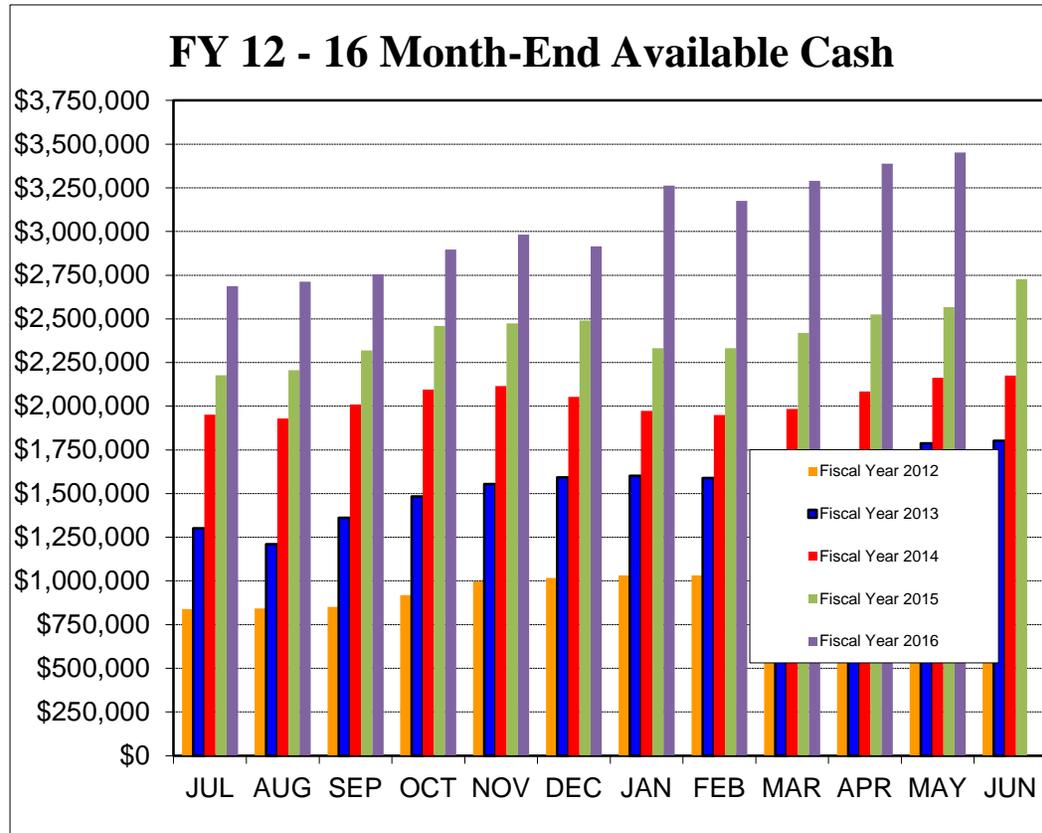
Statement of Revenues and Expenditures

Class	Budget	Fiscal Year To Date	YTD as a % of Budget	Remaining Budget	Projected for Remainder of Year	Projected Year End Totals	Projected Total as a % of Budget
Revenues:	3,870,000	3,969,480	102.6%	(99,480)	297,147	4,266,627	110.2%
Expenditures							
Personnel:	2,537,000	2,488,475	98.1%	48,525	199,078	2,687,553	105.9%
Operating:	656,000	672,679	102.5%	(16,679)	59,528	732,207	111.6%
Capital:	93,800	89,699	95.6%	4,101	4,101	93,800	100.0%
Total Expenditures	3,286,800	3,250,853	98.9%	35,947	262,707	3,513,561	106.9%
Net for FY 2015	583,200	718,626			34,440	753,066	

Statement of Cash Balance

July 1, 2015 Beginning Cash Available	Fiscal Year to Date Revenues	Fiscal Year to Date Expenditures and Encumbrances	Other Changes in Cash	Available Cash as of May 31, 2016	Projected Change in Cash for Remainder of Year	Projected Year End Available Cash
2,726,605	3,969,480	(3,250,853)	7,555	3,452,786	34,440	3,487,226

ELECTRICAL BOARD FUND 0229-01



ELECTRICAL BOARD FUND 0229-01

